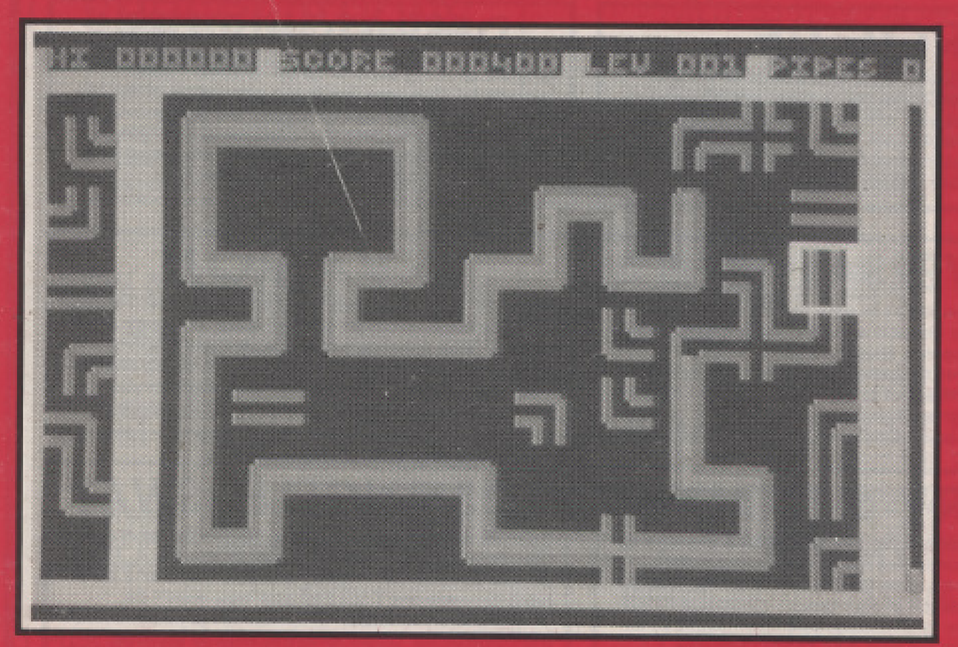
Page 6 Publishing's

NEW ATARI USER

The Resource for the ATARI CLASSIC and the ATARI ST

Issue 64 October/November 1993 £2.50



PIPES - A Turbo Type-In

It will be quite a challenge to get the water flowing

FOR THE ATARI CLASSIC

TOOLKIT

Add some magnificent commands to Basic

MACRO ASSEMBLER

New INCLUDE libraries for input and output

HOW TO USE ANTIC 3

GET A KICK FROM OUR ROUND UP OF MARTIAL ARTS GAMES

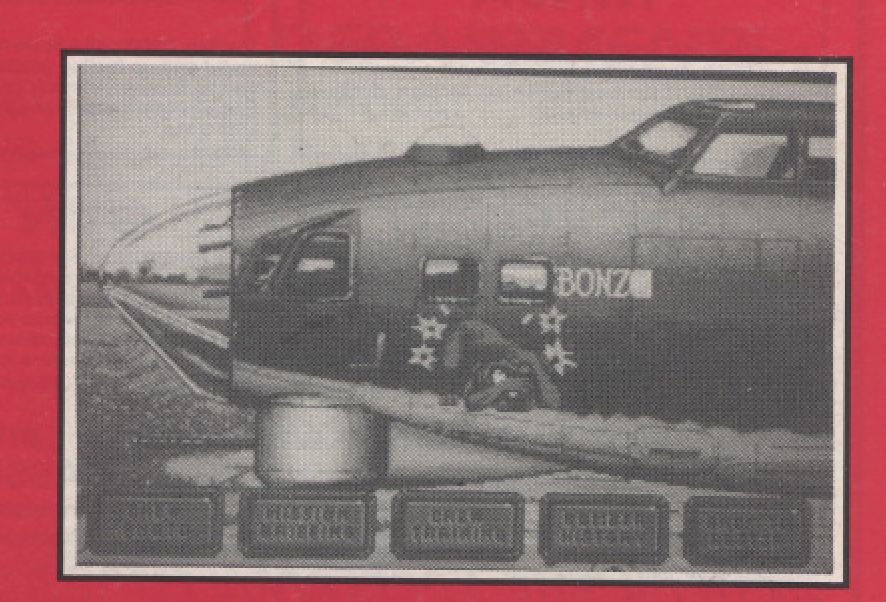
FOR THE ATARI ST

B17 - FLYING FORTRESS

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180
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USE THE ORDER FORM ENCLOSED OR PHONE YOUR ORDER TO PAGE 6 AT 0785 213928

'The magazine for the Dedicated Atari User'

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Issue 64 - October/November 1993



You know what I'm gonna say!

SUBSCRIPTIONS

Annual subscription rates (6 issues)

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Elsewhere (Surface)	£17.00
Elsewhere (Air Mail)	£23.00

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A disk containing all of the 8-bit programs from each issue of NEW ATARI USER is available either separately or on subcription. Single price £2.95 per disk, Subscription rates (6 issues)

UK	£25.00
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Elsewhere (Air)	£42.00

Please make cheques payable to PAGE 6 PUBLISHING and send to the Editorial address shown below

SUBMISSIONS

PAGE 6 welcomes and encourages its readers to submit, articles, programs and reviews for publication. Programs must be submitted on disk or cassette, articles should wherever possible be submitted as text files on disk. We seek to encourage your participation and do not have strict rules for submissions. If something interests you, write a program or article and submit it!

The next issue of NEW ATARI USER will be on sale 30th November
Editorial copy date is 18th October

PROGRAMS

FEATURES

REVIEWS

ST FILE

DEPARTMENTS

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PAGE 6 PUBLISHING's NEW ATARI USER

Issue 64
October/November 1993

'The Magazine for the Dedicated Atari User'

ISSN No. 0958-7705

Editorial

THE CREDITS

All of the usual stuff is on page 3 but here are the people who made this issue possible.

Les Ellingham is now beginning to regret ever thinking up this little game as it's getting harder and harder to think of anything original to say so it looks like he might cop out this time!

Sandy and **Paulette** still carry on as good as ever (see a real cop out!)

Remember **Stacey**? Well, she is now a proud mum with a baby boy born on the 31st August who might be called Jonathon but then again might not. Can this really be the same Stacey who joined us in her first step into the wide world what seems like only a couple of years ago?

The Regular Contributors, who provide the backbone of the magazine and can generally be relied upon to come up with good articles and reviews, are ....

John S Davison · **Stuart Murray**
John Sweeney · **Paul Rixon**
Damon Howarth · **Ian Finlayson**
Allan J. Palmer · **The Tipster**

All other contributors for this issue are individually credited alongside their articles or programs. Thanks to everybody for sharing their enthusiasm with other Atari users.

I actually got some more CD's this time - well it was my birthday back in August! The new release was JANIS IAN which took a bit of listening to before it finally became a good one but then it must be a dozen or more years since she last recorded. The other birthday bounties were Neil Young's Unplugged (a want from last time) which is excellent and shows how great the man really is, plus a couple from the Incredible String Band, oldies of course but still incredibly listenable. I have to admit to being a little surprised at how long these have been spinning this time round as I really only had them for completeness. Mind you the ISB must have made an impression otherwise how would I remember all the words to songs on an album which I originally bought in 1968!

The next issue of NEW ATARI USER could feature YOUR article or program, so SEND IT IN NOW!

PAGE 6 shows just what you can do with your Atari. NEW ATARI USER has always been created entirely with Atari equipment, initially on the XL but more lately with a Mega ST and other stuff, who needs PC's or Macs! With the exception of the final output on a Linotron and the use of an in-house repro camera for the photos and listings everything is done on the ST. Hardware includes a Mega ST2 (upgraded to 4Mb), SM125 Monitor, Supra 30Mb Hard Disk, an Atari Laser Printer, Citizen 124D printer, Philips CM8833 monitor, 130XE, XF551 disk drive, 810 disk drive, 850 interface, NEC 8023 printer. Principal software used is Protext and Fleet Street Publisher 3.0. Other software includes Kermit, TariTalk, Turbo Basic and various custom written programs on the XL/XE. Articles and programs submitted on XL/XE disks are subjected to various custom written programs before being transferred across to the ST via TARITALK. All major editing is done with Protext and pages are laid out with Fleet Street Publisher. A disk with the finished pages as Postscript files is sent to a typesetting bureau to be output on a Linotron and, hey presto, finished pages are sent back exactly as you see them. It really does work! All that is left is to drop in the listings and photos.
Well, it's not quite as easy as that but you get the idea!

DID YOU MAKE THE COMMITMENT?

Well, many of you did and we are most grateful to you for your support but don't let it fall off we want to keep this magazine going for many more years yet. If you didn't commit yourself last issue (and we certainly didn't reach that target of two PD disks per issue) there is still time to make the commitment and, this issue, there is a further choice of software - check out the Accessory Shop pages right away.

If you are one of those people afraid of commitment, don't worry, because there really is no commitment as such, this is just our way of letting you know that we need your support in as many ways as possible to keep the Atari Classic alive. Remember what happened to ANTIC and ANALOG magazines when the going got tough? And that was before the recession! New Atari User is already the longest established Atari magazine, let's go for the Guinness Book of Records!

ONE READER'S SUPPORT

For some time I have been meaning to mention the support that Mark Stinson has been giving us promotion wise in recent months but there has not been room to squeeze it in. Now we are able to publish a letter from Mark which sets out quite eloquently why he believes that a little effort will reap rewards. Read his letter in Mailbag Extra on page 16.

LATE AGAIN!

One or two of you have complained about the last two issues being late and it looks like this one might not make the intended publication date either. Sorry about that but we got a bit off schedule a few issues ago and can't seem to catch up! In the days when we were on sale through the newsagents we had to meet deadlines and there were many, many occasions when I sat up right through the night to meet the deadline. Quite frankly, that pressure is off now and the fear of the heart attack in the wee small hours has diminished! Remember too, that in the good old days, we had a couple of full time staff to do some of the other jobs that just have to be done. So, apologies for the delays but as they say 'better late than never'.

Les Ellingham

REMEMBER TO MAKE THAT COMMITMENT

Mailbag

I'm just back from holiday and the deadline for the column is approaching, so without further ado ...

NETWORKING AND CB

In a previous issue, Arthur Morris asked about networking his Atari Classic; he has written in to thank me for publishing his letter, *"...I have read issue 62's Mailbag and am at present 'digesting' the answers so kindly supplied by your readers. My thanks to them as well."*

Not satisfied with trying to network his Classic, Arthur adds a P.S.:

"Has anyone ever transmitted data from one Atari 8-bit to another using CB radio? I have a friend living about 10 air miles away with whom I regularly chat over the air. Everything we say can; of course be heard by other CB'ers, but if I could download my computer so as to be received by his similar equipment, confidentiality would be assured - but can it be done? Perhaps someone out there has the answer?"

Is it legal to transmit non-voice messages over CB? Do we have any CB experts in the Page 6 readership? I don't know if this is of any use, but TWAUG's Newsletter issue 4 includes a Contact ad from Graham Rayner (G7KCT), 38 Brockhurst Road, Chesham, Bucks HP5 3JE regarding an Atari Radio User Group. I don't know if this is only applicable to Radio Hams, and doesn't apply to CB as I'm not experienced in this area (let's face it, I'm old enough to remember the Home Service and the Light Programme ...)

CASSETTE SOFTWARE

Recent letters have bemoaned that "Page 6" doesn't produce PD software on cassette. Stuart Murray of NoSAUG (71 Walker Road, Torry, Aberdeen AB1 3DL) has asked me to advise cassette users that a number of items in the NoSAUG PD Library and all issues of FUTURA magazine are available on cassette as well as disk. Drop Stuart a SAE for more details!

REPAIRS, SPOOLERS and HARD DRIVES

Sid Berry (17 Old Pond Road, Ashford, Kent TN23 7QX) also thanks me for including him in the column when he offered to repair another reader's disk drive,*"...just to bring you up-to-date, Mr Spencer's disk drive is here being repaired, and the Post Office has to send a van with all the enquiries for repairs, so I am very busy at present."* However, Sid is not too busy to contribute more nuggets to the Mailbag column ...

"Among the letters I received one from Mr P Wooledge of Surrey explaining how he uses the parallel port of a P:R: connection into a crossover switch box and then to a 64k parallel to serial print spooler - it seems like a good idea and I have written to him direct, but felt other users might like this info." Sid is willing to vet this article on expanding the Atari and advise of any defects. Not content with this, Sid has also been looking into obtaining information on a Hard Drive for the Atari Classic. So far, he's had a good response from Dataque Software, Best Electronics, Micro Discount, and Gralin International, however, *"...I have one to add to the list and I quote from the document received "In May 1989 Robert Klaas K Products purchased the rights from Supra Corp to the Atari 8 bit 800XL/130XE hard disk interface. This interface will now be known as the K-P-I Hard Drive Interface with support for former Supra interface and hard drive owners". They have offered me an interface for $110.00 plus shipping and I am awaiting more info from them. They can be contacted at K-PRODUCTS P.O. BOX 22122 AMF SALT LAKE CITY UTAH 84122 U.S.A. They also supply network modules and many other items. If anyone wants a full list, just drop me a line."*

HFM PROBLEMS AGAIN

Sid Berry also comments on Nigel Ludlow's Home Filing Manager problem (see issue 62) in trying to make a back-up copy. *"I experienced this problem years ago when first using this software and could not make back-up copies that worked. In the end, I discontinued using it in favour of a home written program."* What's not clear from your letter, Sid, or from Nigel, is were you having problems with the HFM 'Copy Database' utility? I successfully made back-up copies of data files by employing a PD sector copying utility. Is there a bug in HFM's own utility? I know that at least one upgraded version of HFM was produced by Database Software to overcome errors in one of the modules. Does anyone know the history of HFM?

Jan Dijkstra, Alkmaar, Netherlands also has a comment on another of Nigel's problems: *"In issue 62 Nigel Ludlow reported to be unable to print from Print Shop. Is he*

Allan J Palmer sits in the hot seat at the sorting office awaiting your letters on all things Atari - get writing!

Write to MAILBAG at Page 6 Publishing, P.O. Box 54, Stafford, ST16 1DR

familiar with setting the printer in the so-called "transparent" mode? On my General Electric TXP1000 it works as follows:

1. *Drive off, computer on, printer on, screen on.*
2. *Type in direct mode: LPRINT CHR$(27), CHR$(116);:POKE 580,1 [Return]*
3. *Drive on, insert Print Shop disk. Press RESET and OPTION, release only RESET, Print Shop program loads.*
4. *Use print Shop program which will print without problems*

This trick also helps me to get the printer going when using other programs".

Thanks for that interesting tit-bit Jan, it's not a printer control code listed in my Epson RX80 manual - any comments or explanations anyone?

TRANSDISK IV

In addition to Raphael Espino's notes on TransDisk IV last issue, Dave Herbert of Caldicot, Gwent reports:

"I have successfully copied TRANSDISK game files using the following procedure:

1. *Format destination disk with TransDisk*
2. *Use MYCOPY2 (Futura issue 3) to copy the individual game files across to the destination disk (do not format with MYCOPY2)*

I have only just started using this method but I have noticed that for some reason the number of free sectors on the destination disk gets reduced. However, I have put three games on one disk that work with no problems and will run from the TransDisk menu."

And the man who originally raised the problem, Daniel Baverstock (Brighton, East Sussex) has written:

"Thanks for the help on TransDisk. It is ironic that after sending the letter to Mailbag I found that all I had to use to transfer the XL/XT files to XE/XT files was the SpartaDos X copier. This is what was recommended when transferring files from/to XF551 drive disks. All my disks work fine now. Thank Raphael Espino for the help, I really appreciate it."

ATARIWRITER IN DUTCH?

Also from Jan Dijkstra, a request for help: *"Some time ago I bought "Proofreader" from Page 6 to use with AtariWriter+. They worked fine together as long as I use English. I introduced a list of Dutch words as my private dictionary, which was possible according to the manual but when I test a text now in Dutch, I get all the words back as 'faults'. Only English words are recognised. Is there a way to replace the list of English by my own list of Dutch words? I thought of copying the dictionary to a blank disk, deleting the English and replacing with Dutch. However, there is no listing of files, so that it is not possible to pick out the appropriate file to replace. Do you know of a way to get around this problem?"*

I don't own AtariWriter+, but looking through my Atari reference sources, I came across a number of issues of BaPAUG's 8:16 magazine which reprinted excerpts from "AtariWriter Plus (for those who don't want to read the book)" by Jimmy Boyce (CACE) reprinted from Atari Interface Magazine. As I understand it, to supplement the in-built AW+/ProofReader dictionary you can create one or more Personal Dictionaries. A Personal Dictionary can be created after spell checking a document - just follow the prompts, or you can build a Personal Dictionary by creating an AW+ document containing your extra words (either type return after each word or leave a space between each word). However, Jimmy notes that there is a limit to each Personal Dictionary file, they can only contain 256 words (628 words on a 130XE), but you can have more than one Personal Dictionary in use. When you wish to use Proofreader, use option [A] to Add a Personal Dictionary and specify the filename - this step can be repeated. Jimmy's article indicates that you may end up loading more words than there is allocated memory space for - unfortunately the limit isn't stated. Also Jimmy notes that each time you correct the spelling of a word that is not on the regular dictionary disk, that word is saved in memory and can be added to your Personal Dictionary when you have completed your spell checking - however, if you save your Personal Dictionary file with the same filename as before, you end up with a double list of words in that file! So save it as a different file. Finally, Jimmy advises to save the file while in ProofReader as some 130XEs do not respond when returning to AW+ and your corrected file is lost upon re-booting. Hopefully, Jan, the above may explain your problems - possibly the word limit in a Personal Dictionary file or the double save to the same filename may be the problem. I must extend my thanks to Jimmy Boyce for a fine series of AW+ tutorials which provided this information.

MORE ATARIWRITER+ PROBLEMS

While we're talking about AtariWriter+, Richard Preston of Winslow, Buckingham writes: *"I recently bought a Panasonic KX-P1123 24-pin printer and as you can see the printing is superb. However, I'm dogged by a problem when I use AtariWriter+. When I print using single A4 sheets I turn on the page wait signal to allow me to insert a fresh sheet of paper after each page. In Mini Office II this works fine, but when I use AtariWriter+, after the first sheet (and the first page wait), when I print the next sheet I find that the line spacing has been increased by 1/2-line space (i.e. single line spacing becomes one-and-a-half line spacing). Consequently all the subsequent pages aren't printed as the print preview shows, which obviously throws out all my page numbering. I have tried various things to try and eliminate the problem but with no success. perhaps someone else has encountered the same problem on their printer and overcome it. I would be grateful for any help as I find that AW+ is able to cope with much longer files on my 130XE than Mini Office II allows."*

Well I thought I was going to have to dig through Jimmy Boyce's tutorials again which include a section on creating a AW+ printer driver, but this time the Tyne & Wear Atari User Group came to the rescue. Issue 4 of their Newsletter contains a KXP-1123 24-pin Printer Driver for use with AtariWriter+ - it's a PD program by Richard Gore - the article describes the use of the driver and the program is on the TWAUG issue disk. Drop the TWAUG a line at P.O. Box 8, Wallsend, Tyne & Wear NE28 6DQ for more details.

WHERE ARE THEY NOW?

Daniel Baverstock also asks: *"Where has Robert Stuart's EXCEL disk magazine gone?"*

Sad to say, Daniel, Robert has decided to call it a day for EXCEL which finished with the triple issue 24/25/26. As Robert wrote in his issue 23 editorial, *"...sales of PD disks kept me going for a while. Now, however, PD stuff is not selling either, and it is getting even more difficult to find good new programs. What is the point of sending for dozens of PD disks from all corners of the globe only to find that nobody wants it? Disk magazines seem to be getting more popular even as the Atari gets more unpopular! Even with the demise of Excel, there is still Futura, TWAUG's disk, The Grim Reaper disk-mag, plus regular disks from Page 6 and Atari Classics. There is still a lot happening in the small world of the Atari, with great new software from Holland, Germany and Poland still arriving regularly. But, the sad fact is that the Atari user base is now far too small (at least in the UK) to support more than one or two main software distributors, so I'm going to have to call it a day! I'll still be contributing to Page 6, helping Neil Ottaway at Tiger Developments with new projects and maybe orte or two other things which I have wanted to do with the Atari for a while, but haven't had time. Maybe now without Excel to worry about, I can get around to them!"*

It's a shame that EXCEL is no longer with us, but let us be grateful that Robert pers-

Mailbag

evered for so long and produced some great disk magazines. Incidentally, the EXCEL disks and PD software can still be obtained courtesy of TWAUG - write to them for details.

Another correspondent, Daniel Carrodano from Roquebrune sur Argens, France reports that: *"...Atari Interface Magazine no longer accepts new subscriptions; (I know, because Patye Rayl has refunded me my renewal subscription money with the words above ...)"*.

Looks like it's time for Les to update the Atari Support list in NAU ...

Daniel continues: *"Is BaPAUG still alive? I have not received anything from it from a long time ago. I wrote to Colin Hunt, but I never had any answer. I wrote again about a possible renewal with the same result. I want to continue to support the Atari Classics line, but it is not easy, as you can see."*

Likewise, Ray Pawson from Muswell Hill, London says, *"I am beginning to wonder what has happened to 8:16, the magazine put out by the Bournemouth and Poole Atari User Group (BaPAUG). I renewed my subscription some months ago but I've heard nothing from them. Does anyone know what is going on? Is BaPAUG still in existence?"*

Your Mailbag Editor was also wondering what the 8:6 situation was as he had sent a subscription renewal and ordered some back issue article reprints. I was puzzled when among other comments in another letter Sid Berry noted: *"... the BaPAUG returned my cheque and have ceased publishing the mag 8:16."*

I subsequently made enquiries and received the following letter:

" Thank you for your letter of 5th August regarding "8:16" magazine. This is a topic that has taken a considerable amount of Committee time during the past few months. "8:16" had become increasingly difficult to publish, for the usual reasons - lack of material and available effort - and Colin Hunt had experienced a severe increase in his career workload to such an extent that he has not been able to attend Group evenings, has not been present at Committee Meetings and, above all, we have not been able to contact him until very recently.

At the July BaPAUG Committee Meeting, the decision was taken to cease publication of "8:16" and, mindful of the fact that we have to refund subscribers a proportion of their subscriptions, I was tasked with tracking down Mr Hunt and obtaining his list of Subscribers. All Committee Members had been trying to contact him for several months, myself included, so I tackled the problem head-on and succeeded in locating him a couple of weeks ago via his company's office in Basingstoke. I managed to obtain a list of subscribers from him and, over the next few months, the remaining portion of their subscriptions will be returned to them.

BaPAUG itself is alive and well and I know that the rest of the Committee will join me in apologising for the demise of "8:16" and, particularly, for the delays in clarifying the situation and returning unused portions of subscriptions.

One last point. Our bank insists on charging 74p per cheque above a certain number of cheques, which means we're having to phase payments in "blocks" of 25. I hope that people will bear with us; unused subscriptions WILL be refunded, but probably over a period of several months.

With best regards,
Yours sincerely,
Mike Hosking, Hon. Secretary
Bournemouth & Poole Atari User Group
110 Bridle Way, Canford Bottom, Wimborne, Dorset BH21 2UX"

Thank you for your prompt response to my enquiry, Mike. Again, it is disappointing to hear of the demise of another Atari publication.

PRINTER INTERFACES

Simon Taylor, Birkenhead, Wirral writes: *"I would like to be able to use my Commodore MPS 1230 printer on my 65XE, in the serial port of the disk drive, like a proper Atari printer. Could you please tell me how I can link my printer to the XE, via the serial port on my 1050 disk drive."*

To connect a non-Atari printer to your system, you will need an interface and cable (e.g. Atari 850, ICD P:R: connection, Micro-Print Interface); however, I do not know what connection is at the end of your Commodore printer - is it a "standard" Centronics" one? Can someone advise Simon of the best method of connection?

SERIAL PRINTING, RAM AND TELECOMMS

More comments on printer interfacing come from B Rogers of Southampton who hopes to be able to help Sid Berry to connect and use a serial printer (Mailbag issue 62): *"Assuming the printer is connected to a RS232 type interface (e.g. 850 or P:R: Connection), then it should be possible to output data to the R: handler. Having said that, it must be remembered to boot the R: handler first, and then boot AtariWriter+ after that. It should also be noted that unless the serial printer is connected to port R1:, you MUST specify a device number when using the printer in the same way as you would use a second disk drive in a multi-drive system (D1:, D2:, etc.).*

With regards to Mr Berry's extra memory use, Analog Computing reviewed AtariWriter+ in issue 45 (Aug '88) - in this review it stated that AW+ is already set up to use the extra RAM of the 130XE by switching memory between 3 banks (detailed in the AW+ manual). If, however, Mr Berry means how to use RAM over and above the standard 128K, the only way to get AW+ to recognise that would be to rewrite some of the program - no mean feat I venture to suggest."

Thanks for the suggestions. I think Sid was thinking of trying to use more than 128K. However, if he wants guidance on using the 130XE memory banks, I can point him to those tutorials on AW+ by Jimmy Boyce that I referred to in earlier letters in this column.

Mr Rogers concludes, *"...in the article "Indispensable Utilities" (issue 62), reference is made to "HomePak" from Batteries Included. It is reported that it can be used in the telecommunications field. In my experience, comms packages from the States don't work correctly over here; this being the result of the differing telephone standards between the UK and the US (CCITT vs Bell). How do I know all this? I bought HomePak primarily for its comms facility, and only after a lot of frustration, did I find that whilst it would signal the modem to dial correctly, it would not pick up the line. This is also true of all the other American comms software I tried."*

Would anyone like to pen an article on using the Atari Classic for telecomms? In the past I have successfully used Mini Office II's comms module, Multi-ViewTerm and AMODEM7B successfully.

UTILITIES

Ray Pawson, Muswell Hill, London comments on the article in issue 62 where *"...Patrice Roberts mentions some of the utilities that were (or maybe still are) available for the Atari Classic. In this respect, I wonder if ComputerEyes is still available? If I recall correctly, this enabled pictures to be taken from a video recorder or video camera.*

Another piece of hardware/software I remember reading about was a bar code reader for the 8-bit Atari. this was a complete point-of-sale network system and was made by a company called Xenix Research (I wonder if they are still going?). Why did, and still does for that matter, all the serious stuff come from the States?"

ComputerEyes produced by Digital Visions(?) was available from Alpha Systems in the States, but when I made enquiries a couple of years ago the product was no longer available. I would certainly like to acquire a ComputerEyes interface and software, so if anyone knows where Ray and I can find them, write to Mailbag.

OVERSEAS PAYMENTS

From Fred Meijer, Krimpen ad IJssel, Netherlands, *"In issue 62, a question was asked about ordering software from abroad. I think one of the cheapest ways is to use EuroCheques. Over here in Holland you can get EuroCheques with any bank. You pay a fixed amount for the use of them (about £8 for a year) but you can use as many cheques as you want and there are no extra charges. EuroCheques can be used in almost every European country and you have to write them in the foreign currency. My advice is that you only place orders with large companies like A.N.G. Software in Holland or KE-Soft in Germany. Larger companies are often more trustworthy and have experience with foreign buyers."*

Thanks for that advice, Fred. Can anyone provide alternative suggestions for purchases from North America?

FLIPPING DISKS AND DRIVES

David Bennett, Coventry has written back on the subject of disks, *"The disk I was unable to use was issue 57 with Enhanced Density on side B, with a note to the effect that an unenhanced disk with some files missing was available. Is a free replacement disk available, and what did I miss? Issue 62 also had a note advising that one game really needed an enhanced disk and explained how to make an enhanced version. The note said that the full game would run on a 1050 disk drive, although it would run with some features disabled on the 810 drive. I have unmodified 1050 drives, but could not make the full files fit on my disk. Also there appears to be some gaps in the scrolling message - was it faulty?"*

Side B of the issue 57 disk contains 'Crystal Crisis', 'Display Master', 'Trivia Quiz' and a demo of 'Tactic'. On the 810 version only the Tactic demo is missing. If you have a faulty disk, write or 'phone the Page 6 office and they will sort you out. I've checked through the procedure for the issue 62 disk and it works fine. Are you sure you're copying only the necessary files? You need all the files from side B (use the DOS option C), and only the LEVEL.* files from side A - I end up with 168 sectors free on the enhanced density disk.

David Bennett also comments, *"With games such as 'The Pawn' that use 2 disks, is it possible to run the second disk from the second drive to avoid constantly changing disks? Is it possible to give a list showing types of drive available and what special features are available with it?"*

It looks as though 'The Pawn' was only written to use one drive, so without amendments to the program you are unable to use a second drive to cut down on disk swapping. Your suggestion for a list of types of drive is interesting - to be comprehensive it should include non-Atari produced drives, and the various Happy and Lazer type enhancements. Is there someone out there who could provide the definitive listing?

Information on a non-Atari drive is asked for by J R Iles from Rickmansworth, Herts who wants to find out more about the "Indus GT" disk drive: *"...it seems to have been a popular drive in the U.S.A. about 1985. I have just acquired an Indus GT drive but do not have a serviceable power supply adaptor lead. The power unit I received, and said to have been used with it, was a power unit for the Atari 1010 program recorder. This failed when I first switched on, so I don't know if it was really suitable. I need to know the actual power requirements for the disk drive, i.e. voltage, current, AC or DC. I don't suppose anyone has a power unit for an Indus GT that I could buy? I would also like any manuals, handbooks, etc. or any other information on using the drive."*

MULTILOAD XE CORRECTION

Eric MacInerney of Dublin has found an error in one of the recently published programs: *"Issue 62's utility, MULTILOAD XE, would only load the last program on the menu. I looked at listing 3 in the magazine and saw that line 110 needs changing. I amended the line as follows and program now operates successfully:"*

```
110 DIM F$(14):F$(1,2)="D:":POSITION
1,(A-64)+3:?"LOADING":RESTORE (A-
64):READ A$,Y,Z,FN$:F$(3)=FN$
```

Well done Eric - thanks for identifying the correction. Sorry about that.

DISKBASE PROBLEM

Eric MacInerney also has problems with another program: *"I boot up DiskBase (Page 6 disk DS38) with the disk in the drive and am presented with the menu. I select 'Open File' to add a new file. I enter a file name and follow the prompts. At 'Field Name Length?' I can only enter 0 otherwise I get 'Insufficient Memory'. If I press ESCape the system locks up; the system also locks up when trying to return to the main Menu. I am using 800XL with revision C BASIC and a 1050 disk drive. In the important note in the documentation it says to use 'Key Off' - I don't know how I could do this. Can someone help please?"*

I think I can answer your problems, Eric. I've just tried DiskBase out and encountered the same problem - but it can be overcome by booting the disk WITHOUT BASIC (hold OPTION down) - it looks as though the instructions on the disk label are in error as they suggest you can boot with or without BASIC ... sorry for the confusion. Obviously BASIC takes up some of the memory that DiskBase is expecting to use. Regarding the 'Key Off' command - this is only applicable if you're using SpartaDos (which I assume you aren't).

GAMES FROM ATARI BUT NOT ON THE CLASSIC

From Kevin Cooke, Exeter, Devon: *"Why does Atari ignore its own machines yet still release games for others like Centipede, Missile Command and Asteroids for the GameBoy, and announce plans to convert some of the old Activision games (Pitfall, Kaboom and River Raid) to one of the Nintendo consoles?"*

If only we knew ...

Kevin also wishes to say *"Thanks to Tommy from Cleveland, Ed Hall from Canada and Dave Osbourne in Herts for all of their help over the last few months."*

A USER GROUP

Neil Taylor from 6 Keydell Avenue, Horndean, Hants PO8 9TA ('phone 0705 596242) writes, *"Myself and three other dedicated Atari users have met recently and discussed the possibility of starting up a User Group in the Portsmouth area. However, we will need more interested Atari users to stand any chance of success with a User Group. If you would like to take a more active role in keeping the Atari alive and live in or near Portsmouth, or are in an existing User Group and could give us some information on how to start a new Group, please write or 'phone."*

Good luck with this enterprise, Neil - the TWAUG have been successful recently.

And so, another Mailbag column filled. Thanks for all you input - keep it coming!. Please keep supporting the Atari Classic - buy some PD or commercial software! Don't let the remaining suppliers, user groups, PD libraries and magazines disappear!

Live Long and Prosper!

MAGNIFICENT MINIS

Remember the 5 liners from Atari User? It was like a sport to squeeze as much as possible in less lines than probable. Sometimes complete arcade games! It's time to return to this habit so here are 5 small programs to get in the mood again. I don't stick at 5 lines but the programs are short and typed in very quickly. So if a MINI disappoints you, you haven't wasted too much time typing it in.

```
IO 0 REM mini 2  small screen  by A. KOSM
   OS
QO 10 GRAPHICS 0:POKE 559,0:POKE 82,4:POK
   E 83,35
TG 20 DL=PEEK(560)+256*PEEK(561):POKE DL+
   3,82
YH 30 FOR I=DL+6 TO DL+28:POKE I,18:NEXT
   I:POKE 559,33:LIST
```

The second MINI gives you a small screen the easy way. I don't know why but enabling horizontal scroll on the display list lines up the screen data neatly to the left. If someone can explain why please write to Mailbag. Or better yet, write an article about it and send it in for publication. I bet I am not the only one who is interested in how my Atari works.

Andre Kos re-invents the quick to type, fun to run, mini program

```
RG 10 REM mini 1 NEW YORK by A. Kosmos
PZ 20 GRAPHICS 8:DD=PEEK(88)+256*PEEK(89)
   +6400:POKE 710,14:?OKE 709,0:POKE 756,
   44
BQ 30 FOR X=DD TO DD+39:C=INT(RND(0)*255)
   +1:D=INT(RND(0)*3)+1
TS 40 FOR Y=0 TO 50+RND(0)*50:POKE X-Y*40
   ,C:IF Y/D=INT(Y/D) THEN C=255-C
KQ 50 NEXT Y:FOR Y=Y TO 100:POKE X-Y*40,0
   :NEXT Y:NEXT X:POKE 764,255
MK 60 IF PEEK(764)<>255 THEN GOTO 30
TH 70 GOTO 60
```

This first MINI draws a nice picture of New York, or at least a place that looks like the Big Apple. On a colour TV these buildings seem to have different colours as well. Start typing and see what happens.

```
UJ 0 REM mini 3 utility by A. Kosmos
XX 10 OPEN #1,8,0,"D:LASTDATA.ENT"
MD 11 FOR I=1 TO 56
PS 12 READ A:PUT #1,A
IV 13 NEXT I
LP 14 CLOSE #1
UJ 15 ENTER "D:LASTDATA.ENT"
TL 100 DATA 63,34,68,65,84,65,32,35,34,59
   ,80,69,69,75,40,49,56,50,41,59,34,32,7
   3,78,32
SH 110 DATA 76,73,78,69,32,34,59,80,69,69
   ,75,40,49
VU 120 DATA 56,51,41,43,50,53,54,42,80,69
   ,69,75,40,49,56,52,41,155
```

The third MINI creates a small utility file on disk. It has probably happened to all of you more than a few times, that you have been typing in a long program only to find "ERROR 8" when you run it. Mistyped a DATA somewhere in the listing. But where? The program mainly consists of DATA lines and you have to spend the rest of the day studying these lines to find your typo, knowing that you can look at a small typo for hundred times without seeing it. Not any more! Now you place the disk with the utility and type: 'ENTER "D:LASTDATA.ENT" ' and press RETURN. Presto, there it is: DATA # 8 IN LINE 8520. You can now list line 8520 and count the data in it. When you've tried to read with no more data you get: DATA # 0 IN LINE 32768. And after restore, DATA # 0 IN LINE 0. A real life saver since not every mag has a proofreader.

```
YR 0 REM mini 4 WINDOWS by A. Kosmos
AP 10 GRAPHICS 24:DD=DPEEK(88):POKE 710,1
   4:POKE 709,0:POKE 712,6:DIM A$(40),SCR
   N$(7640):COLOR 1
XN 20 FOR X=0 TO 90 STEP 3:CIRCLE 159,95,
   X:NEXT X:MOVE DD,ADR(SCRN$),7640:DO :X
   =RAND(30)+1:XL=RAND(35-X)+5
OA 30 S=RAND(8)*2:Y=RAND(100)+8:YL=RAND(1
   27-Y)+24:C=RAND(256):D=RAND(4)+1:EXEC
   RAAM:SOUND 0,0,0,0:PAUSE 90:LOOP
CS 40 PROC RAAM:A$=CHR$(C):A$(40)=A$:A$(2
   )=A$:FOR I=Y TO Y+YL:MOVE ADR(A$),DD+X
   +I*40,XL:SOUND 0,I,5,6
BE 50 IF I MOD D:C=256-C:A$(1,1)=CHR$(C):
   A$(2)=A$:ENDIF :NEXT I:SOUND 0,0,0,0
CL 60 PAUSE 400:FOR I=Y+YL TO Y STEP -1:M
   OVE ADR(SCRN$)+X+I*40,DD+X+I*40,XL:SOU
   ND 0,I,5,6:NEXT I:ENDPROC
```

```
MC 0 REM mini 5 hello by A. Kosmos
LB 10 FNT=PEEK(106)-4:POKE 106,FNT:FONT=F
   NT*256
WX 20 GRAPHICS 17:FOR I=1 TO 160:? #6;"♥█
   ♥";:NEXT I:MOVE $E000,FONT,1024
PX 30 DIM A$(16):A$="◢↑6c🅐c6↑◢↑6c🅐c6↑◢":P
   OKE 756,FNT
UJ 40 POSITION 6,10:? #6;"          ":POSITI
   ON 6,11:? #6;" HELLO ":POSITION 6,12:?
    #6;"          "
YQ 50 DO :FOR I=1 TO 8:MOVE ADR(A$)+I,FON
   T,8:PAUSE 1:NEXT I:LOOP
```

MINI 4 and 5 are in TURBO BASIC so you have to load that first. MINI 4 opens and closes coloured windows on a GRAPHICS 8 screen. You can use the routine in your own programs and write your message in the window using the TEXT command. Just play with it for a wile to see what it can do. The last MINI is just an idee for a title screen. Again use it in your own program and experiment with it.

So now you have seen it. Short programs can be fun. Write some of your own and send them to PAGE 6. Make it a contest again. Its great to see your name in your favourite mag. So give it a try, if I can do it, anyone can.

SEND A CONTRIBUTION!

Remember it's your contributions that keep New Atari User alive. Whether it's a set of mini programs like those from Andre Kos or a comprehensive technical article, or an arcade game we want to be able to give other Atari users the opportunity to enjoy your work.

Look out your programs, polish them up and send them in!

Odds & Ends

A NEW LIGHT GUN ...

Atari's own light gun has been rather difficult to find in recent years but for those of you who have longed to blast your TV apart help is now at hand. Micro Discount have recently introduced their own light gun, manufactured for them in California. The gun has a special focusing lens system which Micro Discount claim "makes it the most accurate light gun available for the Atari systems". All existing light gun based software will be compatible. The price is £24.95 plus £1.50 post and packing and the gun will be launched at the forthcoming AMS 7 in November.

AND OPERATION BLOOD

One of the reasons for Micro Discount introducing a new light gun is the release of a light gun version of Operation Blood. Derek Fern, quite sensibly, thought he might not sell many copies of the game if you couldn't play it! Operation Blood light gun version is now available at £5.95

DEAN GARRAGHTY ...

The address for Dean Garraghty shown in various reviews last issue was incorrect although the correct address was shown in his advertisement. The reviews showed the number as 92 instead of 62 and as number 92 doesn't exist you might think the matter could be easily sorted out by Royal Mail but no! Dean suggested that, as the postman could not deliver to a non-existent address, all that had to be done was to deliver mail addressed to 92 to him at 62 Thomson Road. Alas that proved too difficult for Royal Mail to cope with so if you have had letters returned, try again. Our apologies to Dean and our readers for any inconvenience. For the record the correct address is 62, Thomson Avenue, Balby, Doncaster DN4 0NU

ATARI CLASSIC PROGRAMMER'S CLUB ...

We recently received the first copy of a newsletter from The Atari Classic Programmer's Club set up by David Wyn Davies which you may have seen mentioned in recent Contact columns. The idea behind ACPC is to encourage programmers to get together and, hopefully, start producing new software for the Atari Classic. The club will offer a number of support services such as producing flow charts, writing custom music, designing graphics and generally encouraging programmers who have run out of steam to start up and finish outstanding projects.

The idea is excellent and we wish ACPC well. If you are a good Atari programmer and want to try and become a great Atari programmer, you should give ACPC a try. Send a large SAE to ACPC, Pen-Tyddyn, Capel Coch, Llangefni, Anglesey, Gwynedd LL77 7UR and they will send you full details.

AN ALTERNATIVE COMMITMENT

There are several subscribers that give us enormous support recently without getting any credit - the 'unsung heroes' of NAU. Mark Stinson is one such supporter and we were most pleased to receive this letter following the editorial last issue.

Dear Friends,

Having just read issue 63 of New Atari User, I felt that I had to put pen to paper.

Firstly, I would like to thank the gang at PAGE 6 for their continued support for Classic. New Atari User continues to be as informative and enjoyable as it ever has been, even though the support (and presumably the rewards) have obviously dwindled over the years. I don't know where I would be without my copy of NAU every other month, and I know many others are equally indebted to Page 6 for their support.

I would also like to congratulate Allan Palmer for his excellent Mailbag column. I have always felt that an important part of keeping the Classic alive is to share ideas, problems, hints and tips. Mailbag is once again a great source of information and assistance to all Atari users.

The main reason for my writing is in response to Les Ellingham's call to us all to do more to support Page 6 so that in turn Page 6 can continue to support us. I must concur that it is now solely up to us users to make a commitment to ensure the future health of our hobby, but I feel there are many ways to achieve this.

I, and many like me I am sure, am experiencing the difficulties associated with the poor state of the economy. These are hard times and money is no longer readily available for expenditure on the sort of things we may like, such as that latest piece of software. However, there is still much room for helping to keep the Classic, and our indispensable New Atari User, going.

Firstly, why not look at the latest software list and mark up all those titles you would like to add to your collection. This list can then be circulated to family and friends before Christmas and birthdays. I very rarely am able to afford software now as I have a nine month old daughter. This has meant the loss of one income to our household, and leaves little money left for treating myself, but I know that come my birthday, or Christmas, my software collection will again be increased, and loyal supporters of the Classic will have some reason to continue their support. My family are also saved the headache of trying to think up another new present, and are guaranteed that they are getting something they know I want.

The second way we can help is to ensure that as many users as possible who are new to the Classic are informed of the support available for their machines. I have been running ads for a couple of months in Micro Mart asking new users to contact me so that I can send them information about the support available. This cost me only the price of a second class stamp, and yet it helps to support the Classic and suppliers, and it gives new users a whole new outlook for their hobby. Why not try it? Advertise in Micro Mart, or in local papers. Every new subscriber helps to keep our support available.

Finally, why not try your hand at writing an article or a game? For a long time I was content to let others take the initiative while I gained from their efforts. When I finally decided to contribute it gave me great satisfaction in seeing my name in print and I enjoy contributing.

From one user to another, I appeal to everyone to act now. Don't wait until it is too late. Once the support we depend upon disappears we are alone. So think what there is to lose, and think what there is to gain. Is your hobby worth that bit of extra effort?

Once again, thank you for your support.

Mark Stinson

Thank you for *your* support, Mark, it is nice to be able to publicly thank someone who has given unstinting support over many years.

Some time ago Mark hit upon an idea to tackle one of our major problems, how to find new subscribers. As a commercial organisation we are prevented from using the free ads in publication such as Micro Computer Mart and the alternative is to pay something like £400 for a display advert. Frankly, that is just money thrown away as response to adverts in other publications has never been high enough to cover the costs. Mark started placing adverts in his own name offering details of support for the Atari XL/XE and the response has been quite good. We supply him with subscription forms and other material which he mails out to respondents. He requests a stamped addressed envelope for the reply so the only cost is that second class stamp sending in the advertisement. It has certainly helped us but what else can be done?

How about a mass national 'support for the Classic' campaign? There are hundreds of free newspapers and other publications (as well as Micro Computer Mart) all over the country that offer free advertising to individuals. If hundreds of you place an advert offering to provide details of software and support for the Atari XL/XE then we will get some much needed publicity and, maybe, many new subscribers. I have always said that there are tens of thousands of Atari users out there that know nothing of New Atari User and now is your chance to find them! All you need to do is run some adverts for as long as you wish offering details of support for the Atari. If you get a response let us know and we'll send you the subscription forms and details to mail out.

Can it work? Who knows, but it is worth a try. Mark Stinson has had a good response from Micro Computer Mart and we have picked up several new subscribers. If we could pick up a few hundred more that would be excellent and we would know that you were the folks responsible.

Give it a try, and give us a ring when you need those forms. The revival of the Atari Classic starts now!

Les Ellingham

ANTIC 3

Ann O'Driscoll shows you how to drop your descenders!

Antic 3 is a text mode which is fairly similar to Graphics 0 except that the characters take up 10 scan lines instead of the usual 8. As a result you can only fit 19 lines of text on the screen as opposed to the 24 available with Graphics 0. The main advantage of the mode is that it can show lower case characters with descenders (the tail in the g, j, p, q and y) which are longer than those normally attainable.

A NEW DISPLAY LIST

You have to set up your own display list to use Antic 3 as the mode is not supported from Basic. This can be done quite easily by amending the Graphics 0 display list, as shown in LISTING 1.

Line 210 finds the memory address of the start of the Graphics 0 display list. LINE 220 changes the 4th instruction byte from 66 (load memory address plus 1 Graphics 0 line [64+2]) to 67 (load memory address plus 1 mode 3 line [64+3]). The 5th and 6th display list bytes, which hold the screen memory address, are left unaltered. Next, LINE 230 puts the Antic 3 instruction into the following 18 text display bytes. Finally, LINE 240 moves the last 3 Graphics 0 display list instructions, which tell the computer to jump back to the beginning of the display list, into the next 3 locations. Our altered list is shorter than the Graphics 0 list because there are less lines of text to show.

If you run the program and then type some text on the screen, you should notice that the cursor seems longer than usual and also that there is more space between the rows. This is because of the two extra scan lines. Also, if you type in lower case you will see that some of the letters look a bit odd, with their tops cut off and put in at the end. This happens because, in this mode, characters with ASCII codes between 97 and 128 are displayed with the first 2 bytes in the 2 "extra" scan line places beneath. As a result the tall letters - b,d,f,h,i,j,k,l and t - are distorted as shown here. The other lower case letters don't have data in their first two bytes so they appear as usual. Figure 1, which shows the two layouts for the letter "b" might help to illustrate the situation more clearly.

```
KK 10 REM  ANTIC 3 by Ann O'Driscoll
CS 12 REM  Listing 1
OP 14 REM  Display List
BK 16 REM
CJ 210 GRAPHICS 0:DL=PEEK(560)+256*PEEK(5
   61)
IS 220 POKE DL+3,67
LJ 230 FOR N=6 TO 23:POKE DL+N,3:NEXT N
KZ 240 FOR N=24 TO 26:POKE DL+N,PEEK(DL+N
   +5):NEXT N
```

LISTING 1

CHARACTER REDEFINITION

Antic 3 characters are designed on an 8 X 8 grid in the normal way, either by using graph paper or with a font editor. One thing to watch out for is that, if you want to use the last 2 scan lines - for instance to put descenders on letters - you must put the data in the first two bytes. Also, remember that it is only the characters in the last quarter of the set (basically lower case letters plus a few control characters) which are displayed in the new manner, other characters are displayed normally. Of course these may also be redefined. One possibility would be to make taller letters by using the full 8 bytes for data. Usually the first and last character bytes are filled with zeroes so that there is some space between rows of letters on the screen. We don't need to do this with our 2 extra scan lines.

While it might be imagined that any use of Antic 3 would necessarily involve redefining the "tall" lower case characters, the next two programs show different ways in which this can be avoided. Both listings redefine the 5 lower case letters with descenders (g,j,p,q and y). There was no need to use a font editor in these programs as only a few characters were being changed. In each case some space is reserved in RAM, the ROM set is duplicated in this area, the shapes of the selected characters are altered and the new set is called up by poking the RAM page number into memory location 756. In both programs the new character set starts at page 156 and the top of RAM is moved down to page 155.

LISTING 2

In this program each ROM byte is displaced upwards in memory by one position when the character set is being duplicated in RAM (LINE 140). As a result, all the characters are shown one scan line below their usual positions and the tall letters keep their tops. LINES 150-170 redefine the comma (as the tail got lost in the move to RAM) and the five letters. LINE 180 gets rid of unwanted bytes picked up by some letters because of the displacement (i.e. when the last byte of a ROM character became the first byte of a RAM character).

```
KK 10 REM  ANTIC 3 by Ann O'Driscoll
DJ 12 REM  Listing 2
YU 14 REM  DEMO NO. 1
BK 16 REM
WC 110 CLOSE #1:OPEN #1,4,0,"K:":? CHR$(1
   25):POSITION 10,8:? "PRESS A KEY THEN
   WAIT ";
ES 120 GET #1,K:P=PEEK(559):POKE 559,0
GB 129 REM -- DUPLICATE ROM SET IN RAM
PL 130 NB=156:RAMB=NB*256:ROMB=PEEK(756)*
   256:POKE 106,NB-1
VQ 140 FOR N=0 TO 1023:POKE RAMB+N+1,PEEK
   (ROMB+N):NEXT N
YN 149 REM -- REDEFINE SOME LETTERS
ZR 150 RESTORE 160:FOR NN=1 TO 6:READ BB:
   FOR N=0 TO 7:READ B:POKE RAMB+BB*8+N,B
   :NEXT N:NEXT NN
FJ 160 DATA 12,0,0,0,0,0,24,24,48,103,6,1
   24,0,62,102,102,62,6,106,6,60,6,0,6,6,
   6,6
OE 170 DATA 112,96,96,0,124,102,102,124,9
   6,113,6,6,0,62,102,102,62,6,121,6,126,
   0,102,102,102,126,6
KV 180 FOR N=1 TO 6:READ BB:POKE RAMB+BB*
   8,0:NEXT N:DATA 13,28,104,107,114,122
RT 200 REM -- DISPLAY LIST
LM 210 GRAPHICS 0:DL=PEEK(560)+256*PEEK(5
   61):POKE DL+3,67:FOR N=6 TO 23:POKE DL
   +N,3:NEXT N
KV 220 FOR N=24 TO 26:POKE DL+N,PEEK(DL+N
   +5):NEXT N
NR 300 REM -- CALL UP NEW SET
YR 310 POKE 559,P:POKE 709,14:POKE 710,0:
   POKE 756,NB
DY 320 ? "The quick brown fox jumped":? "
   over the lazy dog..."
NY 330 END
```

LISTING 2

LISTING 3 ☞

```
KK 10 REM  ANTIC 3 by Ann O'Driscoll
EA 12 REM  Listing 3
ZM 14 REM  DEMO NO. 2
BK 16 REM
AR 410 CLOSE #1:OPEN #1,4,0,"K:":? CHR$(1
   25):POSITION 10,8:? "PRESS A KEY AND W
   AIT ";
EV 420 GET #1,K:P=PEEK(559):POKE 559,0
GE 429 REM -- DUPLICATE ROM SET IN RAM
PO 430 NB=156:RAMB=NB*256:ROMB=PEEK(756)*
   256:POKE 106,NB-1
KY 440 DIM MC$(34):RESTORE 450:FOR N=1 TO
    34:READ MC:MC$(N,N)=CHR$(MC):NEXT N:X
   =USR(ADR(MC$),RAMB)
OZ 450 DATA 104,104,133,207,104,133,206,1
   69,0,133,204,169,224,133,205,162,4,160
   ,0,177
SV 460 DATA 204,145,206,136,208,249,230,2
   05,230,207,202,208,242,96
VB 490 REM -- PUT LOWER CASE CHARS IN
CB 491 REM -- CONTROL CHAR ROM LOCATIONS
GH 500 FOR NN=65 TO 90:FOR N=0 TO 7:POKE
   RAMB+NN*8+N,PEEK(ROMB+(32+NN)*8+N):NEX
   T N:NEXT NN
YJ 509 REM -- REDEFINE SOME LETTERS
YG 510 RESTORE 520:FOR NN=1 TO 5:READ BB:
   FOR N=0 TO 7:READ B:POKE RAMB+BB*8+N,B
   :NEXT N:NEXT NN
LD 520 DATA 103,6,124,0,62,102,102,62,6,1
   06,6,60,6,0,6,6,6,6
OA 530 DATA 112,96,96,0,124,102,102,124,9
   6,113,6,6,0,62,102,102,62,6,121,6,126,
   0,102,102,102,126,6
OR 532 REM -- LINES 535 AND 536 HAVE
VF 533 REM -- DATA FOR BIGGER LETTERS
XD 535 DATA 103,6,124,62,102,102,102,62,6
   ,106,6,60,6,0,6,6,6,6
IH 536 DATA 112,96,96,124,102,102,102,124
   ,96,113,6,6,62,102,102,102,62,6,121,6,
   126,102,102,102,102,126,6
UT 540 REM -- ANTIC 3 DISPLAY LIST
CU 550 GRAPHICS 0:DL=PEEK(560)+256*PEEK(5
   61)
OC 560 POKE DL+3,67:FOR N=6 TO 23:POKE DL
   +N,3:NEXT N
LI 570 FOR N=24 TO 26:POKE DL+N,PEEK(DL+N
   +5):NEXT N
NU 600 REM -- CALL UP NEW SET
YU 610 POKE 559,P:POKE 709,14:POKE 710,0:
   POKE 756,NB
RB 620 ? "TYPE IN UPPER OR LOWER CASE.":?
    "PRESS RETURN TO QUIT:":?
EZ 700 REM -- CHECK USER INPUT --
CH 710 GET #1,K:IF K=155 THEN 800
IB 720 IF K<97 OR K>122 OR K=103 OR K=106
    OR K=112 OR K=113 OR K=121 THEN 750
PO 730 K=K-96
WB 750 ? CHR$(K);:GOTO 710
NX 800 END
```

LISTING 3

This program uses a different approach. This time a machine code routine is used to set up the RAM character set (LINES 440-460) and there is no displacement. LINE 500 puts all the lower case letters in the control character RAM locations. CTRL-A holds "a", CTRL-B holds "b", and so on. LINES 510-530 redefine our descender letters using the same DATA as was used in the previous listing - we could have made them slightly bigger this time as there's an extra scan line to play around with, but this would have put them out of proportion with all the other letters. (LINES 535 and 536 hold data for larger letters; use these instead of LINES 520 and 530 to see the effect). The routine beginning at LINE 700 converts the lower case characters (apart from the redefined ones) to the control character equivalents before printing them on the screen. These, of course, are displayed normally as this section of the character set (locations 65 to 90) is not affected by the "lopping off".

FINALLY...

Well that about covers Antic 3. It's not a mode that crops up a lot in program listings, possibly because it's not much use unless the characters are redefined. I hope that this article has shown that such a task is not as difficult as might have been imagined.

	Sample lower case character	***as displayed by Antic 3***	
byte 0	0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0	
byte 1	0 1 1 0 0 0 0 0	0 0 0 0 0 0 0 0	
byte 2	0 1 1 0 0 0 0 0	0 1 1 0 0 0 0 0	byte 2
byte 3	0 1 1 1 1 1 0 0	0 1 1 1 1 1 0 0	byte 3
byte 4	0 1 1 0 0 1 1 0	0 1 1 0 0 1 1 0	byte 4
byte 5	0 1 1 0 0 1 1 0	0 1 1 0 0 1 1 0	byte 5
byte 6	0 1 1 1 1 1 0 0	0 1 1 1 1 1 0 0	byte 6
byte 7	0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0	byte 7
		0 0 0 0 0 0 0 0	byte 0
		0 1 1 0 0 0 0 0	byte 1

Figure 1

ATARI IN THE LAND OF THE AUTOBAHN

Regular readers of New Atari User will know that the original plan for the German Atari Show was to hire a 56 seater coach and take many Atari users to Germany. Unfortunately like most plans the idea was good but the enthusiasm from 8 bit users was sadly lacking as only 27 people phoned to book places on the trip. The cost of taking only 27 made it very expensive so the trip regrettably was cancelled. So yours truly and three other dedicated Atari 8 bit enthusiasts travelled to Hanau, a small town close to Frankfurt in Germany. Driving in Germany is like taking part in a Formula 1 race, nobody travels at less than 100 mph !! 1200 miles on the wrong side of the road, at speeds averaging 85 to 90 mph and even then the only things I managed to overtake was 3 dust carts and a battered old 2CV!

Hanau is over 600 miles away so I decided to spread the trip over 3 days with two overnight stops, one at Brussels on the outward leg and at Maastricht "that well known treaty town" on the return. To cut costs we chose to stay in Youth hostels. It's certainly not the kit bag and sweaty sock brigade I remember from my scouting days, Continental youth hostels offer what can only be described as 5 star luxury with accommodation plus a continental breakfast for around £8:50 per night. Fantastic value for money.

ARRIVAL AT LAST!

The Show was smaller than I expected, I counted only 13 exhibitors located in two large ground floor rooms. Amazingly the show did not have the massive discount bargain offers you would expect to see at similar U.K shows like A.M.S. Kemal Ezcan the exhibition organiser from KE-SOFT greeted us with "Sorry no Brundles yet " but he has supplied a demo disk showing four of the completed screens. Also present were A.N.G. Software and "Freddy" of MEGA MAG fame from Holland. Apart from the odd one or two new Polish games most stands displayed what can only described as standard items Rom cartridges and disk software which have been available in the U.K. for sometime.

Some exhibitors, however, had some very new and original ideas but unfortunately not all of the new items are yet completed and several exhibitors only had brief demos of the intended finished product. It was a bit like Tomorrow's World, you can see it but can't get it. But it was this new development part of the show that for me made the whole trip worthwhile.

Over the next few months I will be in touch with all of these developers to try and encourage them to complete some of their brilliant ideas, so here's a few details to whet your appetite. I have listed each company name for reference and I would like to thank them for their cooperation and patience in

Derek Fern brings news of the recent German Atari Show including some software we may soon see over here

explaining their products and providing information on their products to a non German speaking Englishman.

THE EXHIBITORS

H.S. COMPUTER: Demonstrated a range of interfaces and software that will link your computer to drive electric motors and servos for robotics and all sorts of mechanical devices. They had a robot arm that could move in all directions and pick up items, a pen plotter that could be used to draw graphs and monitor and record, via sensors, temperature variants over a given time span. The main robotic bits seem to be constructed from Fisher Technic parts and controlled via the joystick ports on a standard 800XL.

ABBUC MAGAZINE: The German Atari User group displayed some of their vast range of club software. They have a very good subscription only disk based club magazine but unfortunately for us it is only available with German text. Wolfgang Burger their Director said he might be willing to make the disk available to U.K. users if enough people wanted, so its up to you to let me know if you want to see it. Wolfgang also expressed his concern about some U.K. suppliers pirating and openly advertising in Atari User Magazine software for sale which is copyrighted by the ABBUC club in Germany. If this continues he will lodge a complaint with a European court and sue for copyright infringement!, I understand the penalties in Germany are fines up to 2,500 DM per pirate copy sold.

FRIDAY SOFTWARE PRODUCTIONS: Friday Soft was a new name to me, its a small two man company developing a brilliant new 16 bit digitised sound replay system. The days of the 7 seconds of digitised sound with the 2 bit systems cartridge are over! Digitised sound files produced on Amiga. ST's and PCs are converted and compressed into 64k or 128k

files and then replayed on your humble 8 bit machine. After loading the main program disk called "Fampy V2.3" you simply load one of the sample files press Return and sit back in amazement. The sound quality is great, especially if you have your computer hooked up to your Hi-Fi system via the monitor port. The playing time for a digitised 64k file is 3 minutes with 8 minutes for a 128k file. The program is a replay system only, the equipment required for file compression and conversion is expensive and complex. I intend to have FAMPY available soon in the U.K with a set of sound sample disks.

ARGS HARDWARE: New exhibitor very much into programming demos, and hardware development. They displayed one of the best LEMMINGS demo's I have seen, excellent sharp animation produced with bit map images. ARG kindly gave us a copy of this demo so you can see an example of their work at the A.M.S. 7 Show.

They also have under development a RS232 interface that plugs into the cartridge port. It carries on board a real time clock and has a Baud rate of 19,200 ideal for high speed modem work. Also under development is a P.C interface for downloading text files from a P.C.

KLAUS PETERS ELEKTRONIC + SOFTWARE: Mainly hardware stand, Klaus is the boffin who designed the speedy and superspeedy disk drive upgrades. His latest development is 1 meg upgrades for 800XL and 130XEs and the machine retains full compatibility with all current software, priced at 170 DM.

Klaus has also developed a 512K ROM DISK, this unusual device plugs into the expansion bus on the 800XL. It is a bare printed circuit board with 5 empty I/C sockets and one EPROM and a few support I/Cs. The EPROM carries the main operating program and menu selection. You can simply blow your utility or game into a 256K EPROM insert the EPROM into one of the empty sockets then select the prom from the on screen menu. This gives you a virtually instant load speed of any program you select. Priced at 165DM for the XE version.

A.M.C. VERLAG: Very interesting stand, A.M.C. are the programmers of the disk game HERBERT 1 & 2. They had on offer lots of the standard Atari items but also one very special demo of a soon to be completed skiing game. What made this demo stand out if you'll excuse the pun was it was in 3D!! Yes real jump off the screen and smack you in the mouth 3D. The programmer explained the game had been underdevelopment for 5 months and he expected it to take another 3/4 months before completion. The demo was to demonstrate the principle of 3D programming it consisted of a landscape scattered with wire frame moving shapes and a matchstick man walking around wire frame pyramids. The screen was blurred to look at without the green/red cardboard specs but put them on and out of the screen popped true 3D. Very impressive, can't wait to see the game. Price estimated to be 34DM. This demo can also be seen at the A.M.S. Show.

TOP MAGAZINE: Well stocked stand, plenty of software/ hardware including their own excellent disk based magazine.

DRACHEN SOFTWARE Germany: Demonstrated a very unusual art package on a high resolution paper white monitor. The demo showed an 8 bit window scrolling across a very large canvass made up with high resolution ST clip art pictures. Everyone on the stand was busy demonstrating so I passed by planning to return later in the day but unfortunately when I returned they had packed up and left so no more details available. I have the companies address and I will obtain more details if anyone is interested. The program certainly looked interesting and to be of excellent quality.

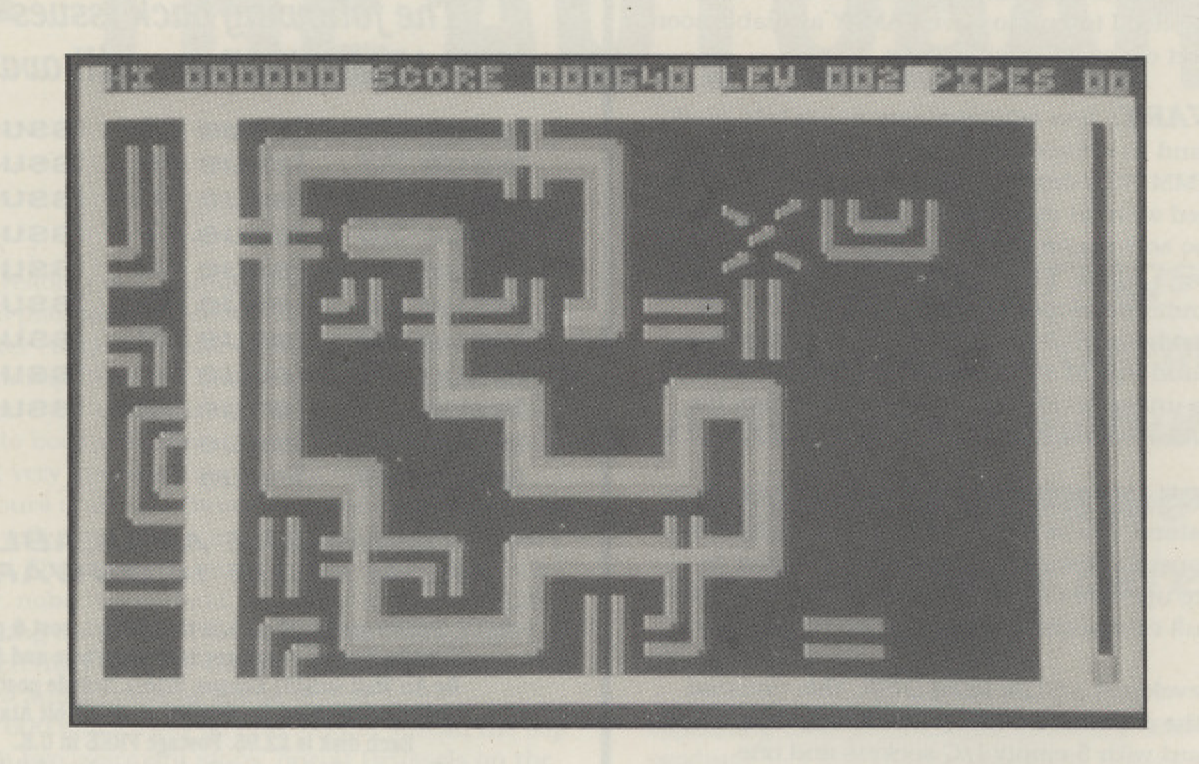
THOSE I MISSED

There was not enough time to talk to everyone and I missed ***POWERSOFT*** and ***M. REITERSHAN*** but I was certainly encouraged by the enthusiasm shown by the dedicated few who spend a considerable amount of time sweating over our beloved 8 bit.

You will be able to see all of the new software demos collected from the trip at Stafford at A.M.S. 7 exhibition. Kemal Ezcan from KE-SOFT Germany and John Maris and Freddy from A.N.G. & Mega Magazine Holland will also be exhibiting as part of the Micro- Discount stand.

A.M.S. 7 promises to be bigger and better than ever, so see you there.

PIPES



by Craig Miller

Pipes is an 8-bit version of an ST classic. The idea of the game is to make a continuous pipeline for the water to flow through. Pipes are dispensed in the order shown at the left of the screen and are placed by moving the cursor and pressing the trigger, the pipes can be placed anywhere on the screen so that you can make your pipeline in sections. You can also replace a pipe by 'bombing' it with another one - but this takes extra time and reduces your score.

Water will start to flow from the start pipe when the timer at the right side of the screen has run out, and you must get it to flow through at least the number of pipes shown at the top right of the screen to complete a level.

If you decide that you have placed enough pipes you can press the 'F' key to make the water flow super fast, this also doubles any points awarded to you.

Later levels have obstacles which must be moved round, reservoirs which will slow down the water flow, exits which move the water from one side of the screen to the other, one-way pieces with arrows indicating which way the water must flow, and end pieces where the water must finish to complete a level.

When you have typed in the program it must be compiled to run at the correct speed. It may be of interest to know that while I was writing this program I used the DEC command to convert the hex data for the character set to decimal so that it could be poked into memory, although the program was compiled without error it crashed when it was run - does anyone know why this happens?

I am sorry about the structure of the program, I originally began writing it in Atari Basic but then stopped when I realised it would not run fast enough. When I got the excellent Turbo Basic about six months later I finished the program, this is when I realised that writing code in an unstructured way is terrible to update and debug. My next contribution will be completely structured and modular, I advise others to write in this way too because although it takes a little longer to write, this time is easily made up when you start to debug the program.

I hope you enjoy playing this game more than I did writing it (I'm definitely going to structure my next game)....bye.

SCORING SYSTEM

Each pipe completed before minimum distance	10 points
Each pipe after minimum distance	20 points
Each crossover section	100 points
5 crossover sections	500 bonus
Full screen completed	5000 bonus
Bombing a pipe	10 point penalty
Each pipe left on screen	20 point penalty

PIPES

```
XF 0 REM
DS 1 REM
FT 2 REM ***PIPES***
MM 3 REM Written by : Craig Miller.
NC 4 REM Language : Turbo Basic.
CZ 5 REM Date : 06/06/92.
FP 6 REM
GU 7 REM NEW ATARI USER (PAGE 6)
YL 8 REM
ZA 9 REM
SV 10 RT=PEEK(106)-21:POKE 106,RT:GRAPHICS 0:R=RT*256+256:C=190:POKE 752,1
EB 20 DIM A$(96),B$(9),C$(9),D$(9):? "PLEASE WAIT - ";(400-C)/10
RJ 30 REPEAT
JS 40 READ A$,F
QK 50 B=0
GT 60 FOR A=1 TO LEN(A$) STEP 2
FH 70 IF ASC(A$(A,A))<60 THEN D=ASC(A$(A,A))-48
DJ 80 IF ASC(A$(A,A))>60 THEN D=ASC(A$(A,A))-55
IL 90 IF ASC(A$(A+1,A+1))<60 THEN E=ASC(A$(A+1,A+1))-48
KX 100 IF ASC(A$(A+1,A+1))>60 THEN E=ASC(A$(A+1,A+1))-55
VX 110 POKE R,D*16+E
JZ 120 B=B+D*16+E
UK 130 R=R+1
CX 140 NEXT A
GM 150 IF B<>F THEN GRAPHICS 0:? "INCORECT ENTRY AT LINE ";C:? "PRESS RESET":STOP
LK 160 C=C+10:POSITION 16,0:? (400-C)/10;" "
CJ 170 UNTIL LEN(A$)<96
GK 180 POKE 756,RT+1
LZ 190 DATA 000000000000000000FFFFC0E0E0E8EBEBFFFFEAEAEAEAEBEBFFFFEAEACAC2C3C3FFFF030B0B2BEBEBFFFFABABABABEBEB,8244
MY 200 DATA FFFFABABA3A3C3C3000000030F3FFCF00C3FFFF3C000000000000C0F0FC3F0F0FF0FC3F0F030000000000000C0F3FF3F0C,5021
BC 210 DATA 0F0F3FFCF0C00000C0C000000000C0C003030000000000303000000000000000000FCFCCCCCCCFCFC00F0F0303030FCFC00,4305
YE 220 DATA 30FC0C3CC0FCFC00FCFC0C300CFC3000C0C0CCCCFC0C0C00FCC0C0FC0CFCFC00FCC0C0FCCCFCFC00FCFC0C3C30303000,6732
DN 230 DATA FCCCFCCCCCFCFC00FCCCCCFC0C0C0C0000000000030F3FFEFAC4D5D5D5C4C4C4C40414551404000FFFF131313135757571 3,5771
OE 240 DATA 101455141000FFFFEAEAAAAAAAAAEAEAC3C300000000EBEB30FCCCFCFCCCC000F0FCCCF0CCFCF00030FCCCC0CCFC3000,7379
CM 250 DATA F0FCCCCCCCFCF000FCFCC0F0C0FCFC00FCFCC0F0F0C0C0007CFCC0C0CCFC3C00CCCCCCFCCCCCCC00FCFC303030FCFC00,8692
WX 260 DATA 0C0C0CCCCCFC3000CCCCFCF0F0CCCC00C0C0C0C0C0FCFC00CCFCFCCCCCCCCC00CCCCFCFCFCFCCC0030FCCCCCCCFC3000,8112
VE 270 DATA F0FCCCFCF0C0C00030FCCCCCCC300C00F0FCCCF0F0CCCC003CFCC0FC0CFCF000FCFC303030303000CCCCCCCCCCFCFC00,7656
GM 280 DATA CCCCCCCCFCFC3000CCCCCCCCFCFCCC00CCCCFC30FCCCCC00CCCCFC3030303000FCFC0C30C0FCFC000000C0F0FCBFAFAF,7597
BM 290 DATA FAFE3F0F03000000FFFFFFFFFFFFFFFAFAFBFFCF0C00000ABABAAAAAAAAABABC3C300002828EBEB03030303030303FFFF,6682
HN 300 DATA C0C0C0C0C0C0FFFFFFFFC0C0C0C0C0C0FFFF030303030303FFFF00000000FFFFC3C3C3C3C3C3C3C3C3C300000000C3C3,7212
DR 310 DATA C3C303030303FFFFC3C3C0C0C0C0FFFFFFFFFC0C0C0C0C3C3FFFF03030303C3C30303030303030303FFFF000000000000,5694
RO 320 DATA 000000000000FFFFC0C0C0C0C0C0C0FFFF80808080FFFFFFFFA0A0A0A0FFFFFFFFA8A8A8A8FFFFFFFFAAAAAAAAFFFF,8630
XM 330 DATA FFFF02020202FFFFFFFF0A0A0A0AFFFFFFFF2A2A2A2AFFFFEBEBC3C3C3C3C3C3EBEBEBEBC3C3C3C3EBEBEBEBEBEBC3C3,8436
QD 340 DATA EBEBEBEBEBEBEBEB0C3FFFFBEAAAAAAAAAAAAAEAFBFF3F0CAAAAAAAAAAAAAAAAAFAFAFAFAFAFAFAFAAFAFAFAFAFAFAFAF,9290
CQ 350 DATA C3C328282828EBEBC3C3C3C3C3C3EBEBC3C3C3C3EBEBEBEBC3C3EBEBEBEBEBEBC3C380808080C3C3C3C3A0A0A0A0C3C3,8892
MV 360 DATA C3C3A8A8A8A8C3C3C3C3AAAAAAAAC3C3C3C302020202C3C3C3C30A0A0A0AC3C3C3C32A2A2A2AC3C3EBEB00000000C3C3,6328
AY 370 DATA EBEB28280000C3C3EBEB28282828C3C3EBEB28282828EBEBEBEBA8A8A8A8EBEBEBEBAAAAAAAAEBEBEBEB2A2A2A2AEBEB,7400
WM 380 DATA EBEBAAAAAAAAC3C3C3C3AAAAAAAAEBEBC3C3A3A3ABABFFFFEBEBABABABABFFFFC3C3CACAEAEAFFFFEBEBEAEAEAEAFFFF,10000
IR 390 DATA EBEB2B2B0B0BFFFFEBEBE8E8E0E0FFFF135757571313131 3C4C4C4C4D5D5D5C4EBEBE8E8E0E0FFFF5555555555555555,7527
JG 400 DATA FFFFFFFFFFAAAAAAAAAAAAFFFFFFFFFF,3570
NK 410 REM *** ANTIC MODE 4 ***
UG 420 DL=PEEK(560)+PEEK(561)*256
SB 430 POKE DL+3,68:FOR A=DL+6 TO DL+28:POKE A,4:NEXT A
HP 440 POKE 82,0
VY 450 REM *** MAIN ROUTINE ***
SS 460 GOSUB 2290:GOSUB 1920:GOSUB 3110
HG 470 GOSUB 2030:GOSUB 2380:GOTO 1360
UA 480 REM *** MOVE WATER ***
IX 490 LOCATE WX,WY,WL:POSITION WX,WY
LI 500 IF WL=45 THEN SP=1
ZV 510 IF WL=46 THEN SP=-1
GT 520 IF SP<>0 THEN 1120
BA 530 IF WL=221 THEN 2610
VI 540 ON DR GOTO 550,700,840,980
UH 550 IF WL=6 THEN ? CHR$(97)
JX 560 IF WL=97 OR WL=98 THEN ? CHR$(WL+1)
AJ 570 IF WL=99 THEN ? CHR$(26):WY=WY-1:Q=1
RB 580 IF WL=11 THEN ? CHR$(36)
OP 590 IF WL=36 THEN ? CHR$(37):DR=4:WX=WX-1
IX 600 IF WL=3 THEN ? CHR$(33)
DX 610 IF WL=33 THEN ? CHR$(34):DR=2:WX=WX+1
OQ 620 IF WL=7 THEN ? CHR$(64)
LO 630 IF WL=64 THEN ? CHR$(0)
QS 640 IF WL=0 THEN ? CHR$(96)
ZG 650 IF WL=96 THEN ? CHR$(110):WY=WY-1:Q=1
AA 660 IF WL=103 THEN ? CHR$(115)
CE 670 IF WL=115 THEN ? CHR$(112):WY=WY-1:SCORE=SCORE+100*FLOW*NP:Q=1:CROSS=CROSS+1:IF CROSS=5 THEN SCORE=SCORE+500*FLOW*NP
BH 680 IF (WY-1)/3=INT((WY-1)/3) AND Q=1 THEN WW=W:W=W-10:Q=0:GOSUB 1190
ZU 690 RETURN
KW 700 IF WL=5 THEN ? CHR$(16)
YU 710 IF WL=16 OR WL=17 THEN ? CHR$(WL+1)
TD 720 IF WL=18 THEN ? CHR$(19):WX=WX+1:Q=1
SV 730 IF WL=11 THEN ? CHR$(38)
NT 740 IF WL=38 THEN ? CHR$(37):DR=3:WY=WY+1
```

continued

PIPES

```
KF 750 IF WL=1 THEN ? CHR$(116)
MN 760 IF WL=116 THEN ? CHR$(117):DR=1:WY
   =WY-1
FR 770 IF WL=7 THEN ? CHR$(100)
EK 780 IF WL=100 OR WL=101 THEN ? CHR$(WL
   +1)
EX 790 IF WL=102 THEN ? CHR$(103):WX=WX+1
   :Q=1
UD 800 IF WL=110 THEN ? CHR$(111)
NV 810 IF WL=111 THEN ? CHR$(112):WX=WX+1
   :Q=1:SCORE=SCORE+100*FLOW*NP:CROSS=CRO
   SS+1:IF CROSS=5 THEN SCORE=SCORE+500*F
   LOW*NP
PO 820 IF WX/3=INT(WX/3) AND Q=1 THEN WW=
   W:W=W+1:Q=0:GOSUB 1190
ZK 830 RETURN
JP 840 IF WL=6 THEN ? CHR$(23)
WN 850 IF WL=23 OR WL=24 THEN ? CHR$(WL+1
   )
SX 860 IF WL=25 THEN ? CHR$(26):WY=WY+1:Q
   =1
FE 870 IF WL=1 THEN ? CHR$(120)
BR 880 IF WL=120 THEN ? CHR$(117):WX=WX-1
   :DR=4
JX 890 IF WL=2 THEN ? CHR$(124)
ZE 900 IF WL=124 THEN ? CHR$(119):WX=WX+1
   :DR=2
MO 910 IF WL=7 THEN ? CHR$(107)
NS 920 IF WL=107 OR WL=108 THEN ? CHR$(WL
   +1)
IK 930 IF WL=109 THEN ? CHR$(110):WY=WY+1
   :Q=1
YW 940 IF WL=103 THEN ? CHR$(114)
SI 950 IF WL=114 THEN ? CHR$(112):WY=WY+1
   :Q=1:SCORE=SCORE+100*FLOW*NP:CROSS=CRO
   SS+1:IF CROSS=5 THEN SCORE=SCORE+500*F
   LOW*NP
UO 960 IF (WY+1)/3=INT((WY+1)/3) AND Q=1
   THEN WW=W:W=W+10:Q=0:GOSUB 1190
ZT 970 RETURN
GN 980 IF WL=5 THEN ? CHR$(20)
TB 990 IF WL=20 OR WL=21 THEN ? CHR$(WL+1
   )
IZ 1000 IF WL=22 THEN ? CHR$(19):WX=WX-1:
   Q=1
TN 1010 IF WL=3 THEN ? CHR$(35)
RU 1020 IF WL=35 THEN ? CHR$(34):WY=WY+1:
   DR=3
XA 1030 IF WL=2 THEN ? CHR$(118)
MC 1040 IF WL=118 THEN ? CHR$(119):DR=1:W
   Y=WY-1
UF 1050 IF WL=7 THEN ? CHR$(104)
ZC 1060 IF WL=104 OR WL=105 THEN ? CHR$(W
   L+1)
DC 1070 IF WL=106 THEN ? CHR$(103):WX=WX-
   1:Q=1
LC 1080 IF WL=110 THEN ? CHR$(113)
ZC 1090 IF WL=113 THEN ? CHR$(112):WX=WX-
   1:Q=1:SCORE=SCORE+100*FLOW*NP:CROSS=CR
   OSS+1:IF CROSS=5 THEN SCORE=SCORE+500*
   FLOW*N
YS 1100 IF (WX-2)/3=INT((WX-2)/3) AND Q=1
    THEN WW=W:W=W-1:Q=0:GOSUB 1190
AE 1110 RETURN
ZD 1120 SC=SC-0.2:POSITION WX+SP,WY:? INT
   (SC)
JF 1130 IF SC>0 THEN RETURN
EY 1140 IF DR=2 THEN POSITION WX,WY-1:WX=
   WX+3:W=W+1
NR 1150 IF DR=4 THEN POSITION WX-2,WY-1:W
   X=WX-3:W=W-1
WG 1160 ? ":ξξ[↓←←←?ξ↓_↓←←←\ξ↑^"
CO 1170 SP=0:SC=9:RETURN
JQ 1180 REM *** WHAT PIPE ? ***
UQ 1190 IF WX=36 THEN LOCATE WX,WY,WL:IF
   WL=31 THEN WX=6:W=W-10
NL 1200 IF WX=5 THEN LOCATE WX,WY,WL:IF W
   L=30 THEN WX=35:W=W+10
WW 1210 IF WY=1 THEN LOCATE WX,WY,WL:IF W
   L=126 THEN WY=22:W=W+70
DJ 1220 IF WY=23 THEN LOCATE WX,WY,WL:IF
   WL=127 THEN WY=2:W=W-70
FL 1230 IF W<1 THEN 2610
XC 1240 IF ASC(A$(WW,WW))<>7 THEN A$(WW,W
   W)=CHR$(99)
LA 1250 IF ASC(A$(WW,WW))=7 THEN A$(WW,WW
   )=CHR$(98)
RI 1260 PN=PN+1:IF PT-PN<0 THEN NP=2
ZY 1270 IF Q=0 THEN WP=ASC(A$(W,W)):IF WP
   =99 THEN 2610
AI 1280 IF Q=1 THEN WP=ASC(A$(WW,WW))
RI 1290 SCORE=SCORE+10*FLOW*NP:IF WP=0 OR
    (WP>=21 AND WP<=24) THEN 2610
NJ 1300 IF DR=1 AND (WP=1 OR WP=2 OR WP=5
    OR WP=8 OR WP=9 OR WP=12 OR (WP>=14 A
   ND WP<=19)) THEN 2610
BM 1310 IF DR=2 AND (WP=2 OR WP=3 OR WP=6
    OR (WP>=9 AND WP<=11) OR (WP>=13 AND
   WP<=16) OR WP=18 OR WP=19) THEN 2610
QZ 1320 IF DR=3 AND (WP=3 OR WP=4 OR WP=5
    OR (WP>=8 AND WP<=13) OR (WP>=16 AND
   WP<=18)) THEN 2610
VI 1330 IF DR=4 AND (WP=1 OR WP=4 OR WP=6
    OR WP=8 OR (WP>=10 AND WP<=15) OR WP=
   17 OR WP=19) THEN 2610
AR 1340 RETURN
FN 1350 REM *** MOVE CURSOR ***
RP 1360 IF STRIG(0)=0 THEN GOSUB 1500
JG 1370 IF INKEY$="F" THEN FLOW=2
QG 1380 POSITION 38,0:IF PT-PN<10 THEN ?
   "0";:IF PT-PN<=0 THEN ? "0":GOTO 1400
OF 1390 POSITION 40-LEN(STR$(PT-PN)),0:?
   PT-PN;
HN 1400 POSITION 23-LEN(STR$(SCORE)),0:?
   SCORE:IF FLOW=2 THEN GOSUB 490:GOTO 13
   80
AS 1410 IF JP>0 THEN JP=JP-1
XZ 1420 J=STICK(0):IF JP=0 AND J=11 AND X
   >72 THEN X=X-12:X1=X1-3:P=P-1:JP=5
ZI 1430 IF JP=0 AND J=7 AND X<180 THEN X=
   X+12:X1=X1+3:P=P+1:JP=5
HJ 1440 IF JP=0 AND J=14 AND Y>48 THEN MO
   VE MY+1024+Y,MY+1024+Y-24,48:Y=Y-24:Y1
   =Y1-3:P=P-10:JP=5
JF 1450 IF JP=0 AND J=13 AND Y<192 THEN -
   MOVE MY+1024+Y-24,MY+1024+Y,48:Y=Y+24:
   Y1=Y1+3:P=P+10:JP=5
IP 1460 POKE HP,X:COUNT=COUNT+1:IF COUNT>
   960 THEN COUNT=COUNT-PS:SS=1:GOSUB 490
CI 1470 IF SS=0 AND COUNT/12=INT(COUNT/12
   ) THEN POSITION 38,POS:? C$(TC,TC):TC=
   TC+1:IF TC=5 THEN TC=1:POS=POS+1
SE 1480 GOTO 1360
SH 1490 REM *** DISPLAY PIPE ***
AN 1500 IF ASC(A$(P,P))>=20 THEN RETURN
FF 1510 IF COUNT/4<>INT(COUNT/4) THEN REP
   EAT :COUNT=COUNT-1:UNTIL COUNT/4=INT(C
   OUNT/4)
RH 1520 IF ASC(A$(P,P))>0 AND ASC(A$(P,P)
   )<20
TZ 1530 POSITION X1,Y1:? ") ,↓←←← , ↓←←←,
    *";:SCORE=SCORE-20:IF SCORE<0 THEN SC
   ORE=0
PB 1540 FOR A=1 TO 180
GL 1550 IF A/FP=INT(A/FP) AND SS=1 THEN G
   OSUB 490
QI 1560 IF A/12=INT(A/12) AND SS=0 THEN C
```

PIPES

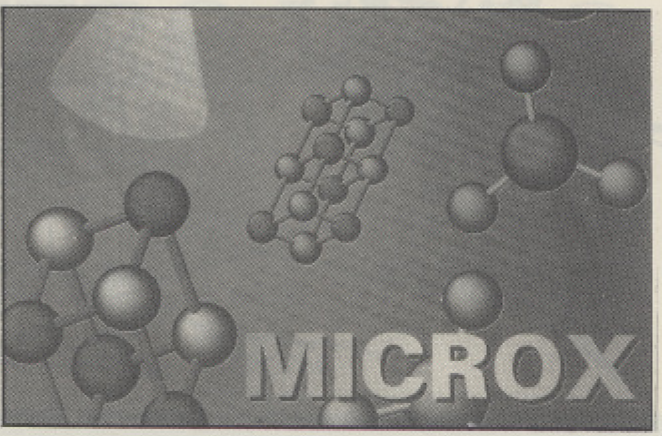
```
    OUNT=COUNT+4:IF COUNT/12=INT(COUNT/12)
     THEN POSITION 38,POS:? C$(TC,TC);:TC=
    TC+1
BQ 1570 IF TC=5 THEN TC=1:POS=POS+1
FG 1580 IF COUNT>=960 THEN SS=1
CQ 1590 NEXT A
FE 1600 ENDIF
UY 1610 IF WX>=X1 AND WX<=X1+2 AND WY>=Y1
    AND WY<=Y1+2 THEN RETURN
TG 1620 RESTORE 10000+PIPE:A$(P,P)=CHR$(P
    IPE)
ND 1630 READ P1,P2,P3,P4,P5,P6,P7,P8,P9
FE 1640 POSITION X1,Y1:? CHR$(P1);CHR$(P2
    );CHR$(P3);"↓←←←";CHR$(P4);CHR$(P5);CH
    R$(P6);"↓←←←";CHR$(P7);CHR$(P8);CHR$(P
    9)
MV 1650 REM *** SELECT NEXT PIPE ***
VA 1660 B$(1,6)=B$(2,7)
BN 1670 B=INT(RND(0)*7)+1:B$(6,6)=CHR$(B)
XA 1680 FOR A=1 TO 6
KA 1690 D$(A,A)=CHR$(ASC(D$(A,A))+1)
BT 1700 NEXT A
LJ 1710 D$(B,B)="♥"
WV 1720 IF INT(RND(0)*10)+1<=PR AND ASC(B
    $(6,6))<>7 THEN B$(6,6)=CHR$(ASC(B$(6,
    6))+((INT(RND(0)*2)+1)*7))
WN 1730 FOR A=1 TO 6
WL 1740 IF ASC(D$(A,A))=MP THEN B$(6,6)=C
    HR$(A):D$(A,A)="♥"
CI 1750 NEXT A
JR 1760 IF ASC(B$(6,6))>14 THEN B$(6,6)=C
    HR$(ASC(B$(6,6))-1)
KC 1770 PIPE=ASC(B$(1,1)):IF B$(5,5)=B$(6
    ,6) THEN DBC=DBC+1
YD 1780 IF B$(5,5)<>B$(6,6) THEN DBC=0
BT 1790 IF DBC>=DB THEN 1670
XV 1800 IF COUNT/3<>INT(COUNT/3) THEN REP
    EAT :COUNT=COUNT-1:UNTIL COUNT/3=INT(C
    OUNT/3)
WJ 1810 FOR A=1 TO 6
RD 1820 IF SS=1 AND A/FF=INT(A/FF) THEN G
    OSUB 490
MM 1830 IF SS=0 THEN COUNT=COUNT+3:IF COU
    NT/12=INT(COUNT/12) THEN POSITION 38,P
    OS:? C$(TC,TC):TC=TC+1
BN 1840 IF TC=5 THEN TC=1:POS=POS+1
FD 1850 IF COUNT>=960 THEN SS=1
WL 1860 RESTORE 10000+ASC(B$(7-A,7-A))
NT 1870 READ P1,P2,P3,P4,P5,P6,P7,P8,P9
OW 1880 POSITION 1,A*3:? CHR$(P1);CHR$(P2
    );CHR$(P3);"↓←←←";CHR$(P4);CHR$(P5);CH
    R$(P6);"↓←←←";CHR$(P7);CHR$(P8);CHR$(P
    9)
CW 1890 NEXT A
AR 1900 RETURN
MP 1910 REM *** CREATE P/M GRAPHICS ***
VQ 1920 PM=54279:RT=RT+5:HP=53248:POKE 75
    2,1:C$="cba/":SCR=DPEEK(88)
XP 1930 POKE PM,RT:POKE HP,0
SM 1940 MY=256*RT
ZY 1950 POKE 559,62
DF 1960 POKE 53277,3:POKE 53256,1
ZO 1970 FOR A=MY+1024 TO MY+2048:POKE A,0
    :NEXT A
UX 1980 POKE 704,140:RESTORE 2010
MG 1990 FOR A=0 TO 23:READ I:POKE MY+1024
    +Y+A,I:NEXT A
AA 2000 RETURN
IN 2010 DATA 252,252,132,132,132,132,132,
    132,132,132,132,132,132,132,132,132,13
    2,132,132,132,132,132,252,252
ZY 2020 REM *** SETUP VARIABLES ***
RF 2030 QQ=0:A$(1)=CHR$(0):A$(90)=CHR$(0)
    :A$(2)=A$
TK 2040 A=INT(RND(0)*8)+2:B=INT(RND(0)*5)
    +1:D=INT(RND(0)*4)+21:COUNT=0:PIPE=1:P
    =A+B*10
DR 2050 IF A$(P,P)<>"♥" OR A$(P+1,P+1)<>"
    ♥" OR A$(P-1,P-1)<>"♥" OR A$(P-10,P-10
    )<>"♥" OR A$(P+10,P+10)<>"♥" THEN 2040
HG 2060 IF A$(P+9,P+9)<>"♥" OR A$(P+11,P+
    11)<>"♥" OR A$(P-9,P-9)<>"♥" OR A$(P-1
    1,P-11)<>"♥" THEN 2040
UN 2070 RESTORE 10000+D
QE 2080 X1=A*3+3:Y1=B*3+2:X=60+A*12:Y=48+
    B*24:P=A+B*10:A$(P,P)=CHR$(D):W=P:WX=X
    1+1:WY=Y1+1
NK 2090 READ P1,P2,P3,P4,P5,P6,P7,P8,P9
KR 2100 DR=ASC(A$(W,W))-20
EM 2110 POSITION X1,Y1:? CHR$(P1);CHR$(P2
    );CHR$(P3);"↓←←←";CHR$(P4);CHR$(P5);CH
    R$(P6);"↓←←←";CHR$(P7);CHR$(P8);CHR$(P
    9)
KQ 2120 IF QQ=0 AND LEVEL>=20 AND LEVEL/2
    =INT(LEVEL/2) THEN QQ=1:GOTO 2040
XA 2130 QQ=0
FD 2140 IF LEVEL<10 THEN 2260
NG 2150 A=INT(RND(0)*8)+2:B=INT(RND(0)*5)
    +1:D=A+B*10:IF QQ=0 THEN E=20
JD 2160 IF QQ>=1 THEN E=25
NS 2170 IF A$(D,D)<>"♥" OR A$(D+1,D+1)<>"
    ♥" OR A$(D-1,D-1)<>"♥" OR A$(D+10,D+10
    )<>"♥" OR A$(D-10,D-10)<>"♥" THEN 2150
ZD 2180 IF ASC(A$(D-9,D-9))<25 AND ASC(A$
    (D-9,D-9)))0 THEN 2150
PS 2190 IF ASC(A$(D+9,D+9))<25 AND ASC(A$
    (D+9,D+9)))0 THEN 2150
IJ 2200 IF ASC(A$(D-11,D-11))<25 AND ASC(
    A$(D-11,D-11)))0 THEN 2150
YM 2210 IF ASC(A$(D+11,D+11))<25 AND ASC(
    A$(D+11,D+11)))0 THEN 2150
AP 2220 A$(D,D)=CHR$(E):POSITION A*3+3,B*
    3+2
DC 2230 IF E=20 THEN ? "'()↓←←←-9.↓←←←*+,
    ";
XS 2240 IF E=25 THEN ? "◥▙↓←←←◢ ◣↓←←←▛.▼
    ";:REM INVERSE JEK F F IEH
HG 2250 IF INT(RND(0)*2)=0 OR QQ=0 THEN Q
    Q=1:GOTO 2150
SW 2260 GOSUB 1970:POKE HP,X
AZ 2270 RETURN
BA 2280 REM *** DRAW SCREEN ***
RD 2290 POKE 709,24:POKE 710,180:POKE 711
    ,86:POKE 712,0:? "K]HI 000000]SCORE 00
    0000]LEV 000]PIPES 00";
UC 2300 ? "]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]
    ]]]]]]]]]]";
BI 2310 FOR A=1 TO 21
OR 2320 ? "]    ]]
          ]]4]";
BV 2330 NEXT A
YZ 2340 ? "]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]
    ]]]]]]]]]]";
GK 2350 POKE DPEEK(88)+959,189
AY 2360 RETURN
NS 2370 REM SELECT FIRST SET OF PIPES ***
WV 2380 FOR A=1 TO 6
XT 2390 B$(A,A)=CHR$(INT(RND(0)*7)+1)
QE 2400 IF INT(RND(0)*10)+1<=PR AND ASC(B
    $(A,A))<>7 THEN B$(A,A)=CHR$(ASC(B$(A,
    A))+((INT(RND(0)*2)+1)*7))
RF 2410 IF ASC(B$(A,A))>14 THEN B$(A,A)=C
    HR$(ASC(B$(A,A))-1)
LA 2420 IF A>1 THEN IF B$(A,A)=B$(A-1,A-1
    ) THEN DBC=DBC+1
YW 2430 IF A>1 THEN IF B$(A,A)<>B$(A-1,A-
    1) THEN DBC=0
```

continued

PIPES

```
BA 2440 IF DBC>=DB THEN 2390
YN 2450 RESTORE 10000+ASC(B$(A,A))
NJ 2460 READ P1,P2,P3,P4,P5,P6,P7,P8,P9
TW 2470 POSITION 1,21-A*3:? CHR$(P1);CHR$
    (P2);CHR$(P3)
MZ 2480 POSITION 1,21-A*3+1:? CHR$(P4);CH
    R$(P5);CHR$(P6)
CX 2490 POSITION 1,21-A*3+2:? CHR$(P7);CH
    R$(P8);CHR$(P9)
BQ 2500 NEXT A
XO 2510 B$(7,7)="1":PIPE=ASC(B$(1,1))
SV 2520 IF LEVEL<6 THEN RETURN
GE 2530 REM *** PUT DOORS IN ***
RM 2540 FOR A=1 TO INT(LEVEL/25)+1
ZB 2550 IF A=4 THEN A=INT(LEVEL/25)+1
HH 2560 B=INT(RND(0)*10)*3:POSITION 6+B,1
    :? "ξ(ξ(ξ(";:POSITION 6+B,23:? "ξ)ξ)ξ)
    ";
FP 2570 B=INT(RND(0)*7)*3:POSITION 5,2+B:
    ? "ξ←↓←ξ←↓←ξ←";:POSITION 36,2+B:? "ξ→↓
    ←ξ→↓←ξ→";
CO 2580 NEXT A
BL 2590 RETURN
XD 2600 REM *** FLOW HAS STOPPED ***
OL 2610 POKE HP,0:B=0:FOR A=1 TO 70:IF AS
    C(A$(A,A))>20 THEN B=B+1
GH 2620 NEXT A:IF B=70 THEN SCORE=SCORE+5
    000
EJ 2630 IF LEVEL<20 OR LEVEL/2<>INT(LEVEL
    /2) THEN 2720
TP 2640 IF DR=1 AND A$(W,W)=CHR$(23) AND
    PN<PT THEN PN=0
MN 2650 IF DR=1 AND A$(W,W)<>CHR$(23) THE
    N PN=0
VN 2660 IF DR=2 AND A$(W,W)=CHR$(24) AND
    PN<PT THEN PN=0
OM 2670 IF DR=2 AND A$(W,W)<>CHR$(24) THE
    N PN=0
SN 2680 IF DR=3 AND A$(W,W)=CHR$(21) AND
    PN<PT THEN PN=0
LJ 2690 IF DR=3 AND A$(W,W)<>CHR$(21) THE
    N PN=0
TJ 2700 IF DR=4 AND A$(W,W)=CHR$(22) AND
    PN<PT THEN PN=0
MG 2710 IF DR=4 AND A$(W,W)<>CHR$(22) THE
    N PN=0
AA 2720 X=6:Y=2
EL 2730 FOR A=1 TO 70
NJ 2740 IF ASC(A$(A,A))<20 AND ASC(A$(A,A
    ))>0
DZ 2750 SCORE=SCORE-10:POSITION X,Y:? ")
    ,↓←←← , ↓←←←, *";:SOUND 1,255,12,10:PA
    USE 5:SOUND 1,0,0,0
AI 2760 IF SCORE<0 THEN SCORE=0:POSITION
    17,0:? "000000";
BU 2770 POSITION 23-LEN(STR$(SCORE)),0:?
    SCORE
VS 2780 POSITION X,Y:? "   ↓←←←   ↓←←←
    ";
GI 2790 ENDIF
EK 2800 IF A/10=INT(A/10) THEN X=3:Y=Y+3
TT 2810 X=X+3
CC 2820 NEXT A
WJ 2830 POSITION 12,7:? "
    "
VR 2840 POSITION 12,8:? " ◣┐┐┐┐┐┐┐┐┐┐┐┐┐▘
    "
AJ 2850 FOR A=9 TO 14:POSITION 12,A:? " /
             / ":NEXT A
MP 2860 POSITION 12,15:? " ▖┐┐┐┐┐┐┐┐┐┐┐┐┐
    ◢ "
JO 2870 POSITION 12,16:? "
    "
QW 2880 IF PN>=PT THEN 2920
BV 2890 IF SCORE>HSCORE THEN HSCORE=SCORE
    :POSITION 10-LEN(STR$(HSCORE)),0:? HSC
    ORE
DV 2900 POSITION 16,11:? "GAME OVER":POSI
    TION 15,13:LEVEL=0:SCORE=0:CL=0
FK 2910 ? "PRESS TRIG":GOTO 2940
AI 2920 POSITION 15,10:? "LEVEL ";LEVEL
OH 2930 POSITION 15,12:? "COMPLETED"
YH 2940 D$="♥♥♥♥♥♥♥♥♥":SS=0:SP=0:SC=9:PN=
    0:LEVEL=LEVEL+1:NP=1:CROSS=0:PR=INT(LE
    VEL/10):IF PR>6 THEN PR=6
ON 2950 DBC=0:DB=INT(LEVEL/10)+1:MP=8+INT
    (LEVEL/7):IF MP>12 THEN MP=12
LC 2960 PT=13+INT(LEVEL/5)
ZO 2970 IF LEVEL/5=INT(LEVEL/5) THEN CL=0
CE 2980 CL=CL+1:PT=PT+CL:IF PT>25 THEN PT
    =25
VO 2990 POS=2:TC=1:S=0:FLOW=1:IF LEVEL<25
     THEN PS=6:FF=3:FP=25
HQ 3000 IF LEVEL>=25 THEN PS=3:FF=2:FP=12
WG 3010 PAUSE 50
RK 3020 A=ASC(INKEY$)
EP 3030 IF STRIG(0)=1 THEN 3030
FQ 3040 POSITION 17,0:? "000000]LEV 000]P
    IPES ";PT:POSITION 31-LEN(STR$(LEVEL))
    ,0:? LEVEL
VS 3050 POSITION 5,1:? "]]]]]]]]]]]]]]]]]
    ]]]]]]]]]]]]]]]]]";
CW 3060 FOR A=2 TO 22
ZT 3070 POSITION 5,A:? "]
                  ]]└"
CF 3080 NEXT A
LK 3090 POSITION 5,23:? "]]]]]]]]]]]]]]]]]
    ]]]]]]]]]]]]]]]]]";
RJ 3100 GOTO 470
DE 3110 POSITION 12,8:? "◣┐ ▘ / ◣┐ ▘ ◣┐┐ ◣┐
    ┐"
FY 3120 POKE DPEEK(88)+959,189
GW 3130 POSITION 12,9:? "/ / / / / /   /"
XW 3140 POSITION 12,10:? "/┐◢ / /┐◢ /┐   ▪
    ┐▘"
FE 3150 POSITION 12,11:? "/    / /   /
     /"
PI 3160 POSITION 12,12:? "/    / /    ▖┐ ┐
    ┐◢"
SO 3170 POSITION 9,15:? "WRITTEN BY CRAIG
     MILLER":POSITION 15,17
SS 3180 GOTO 2910
BC 10000 REM
VC 10001 DATA 1,6,15,5,1,15,13,13,32
RS 10002 DATA 12,6,2,12,2,5,32,13,13
UD 10003 DATA 32,14,14,12,3,5,12,6,3
MA 10004 DATA 14,14,32,5,11,15,4,6,15
IX 10005 DATA 14,14,14,5,5,5,13,13,13
NM 10006 DATA 12,6,15,12,6,15,12,6,15
WK 10007 DATA 1,6,2,5,7,5,4,6,3
DR 10008 DATA 1,6,15,5,1,59,13,13,32
FL 10009 DATA 12,6,2,122,2,5,32,13,13
GG 10010 DATA 32,14,14,122,3,5,12,6,3
TT 10011 DATA 14,14,32,5,11,59,4,6,15
KD 10012 DATA 14,62,14,5,5,5,13,13,13
UX 10013 DATA 12,6,15,12,6,59,12,6,15
GT 10014 DATA 1,6,15,5,1,123,13,13,32
VI 10015 DATA 12,6,2,61,2,5,32,13,13
YB 10016 DATA 32,14,14,61,3,5,12,6,3
ZQ 10017 DATA 14,14,32,5,11,123,4,6,15
KB 10018 DATA 14,60,14,5,5,5,13,13,13
BB 10019 DATA 12,6,15,12,6,123,12,6,15
DO 10020 DATA 39,40,41,45,57,46,42,43,44
XZ 10021 DATA 12,6,15,12,6,15,32,13,32
UT 10022 DATA 32,14,14,12,5,5,32,13,13
ZV 10023 DATA 32,14,32,12,6,15,12,6,15
XZ 10024 DATA 14,14,32,5,5,15,13,13,32
DH 10025 DATA 65,65,65,65,65,65,65,65,65
```

MICROX



This game is a combination of the familiar puzzle theme adopted by many European software authors and a rather innovative educational concept. The end result is one of the most addictive programs I've encountered for a long while!

On each level of MICROX you are asked to assemble a chemical compound - for example water, methanol or propene - from a disjointed collection of its atomic constituents. If you've ever come across 3-D models constructed from coloured balls and small connecting rods to represent different atoms and how they relate to each other in a substance, you'll have a good idea of what this is all about. It may sound a bit complicated but actually it's very simple. You're not expected to know the precise structure of each compound, since this is displayed at the start of the level and can be re-examined during play with a press of the Start button (this function also acts as pause mode). The principal challenge arises from the less than straightforward task of manoeuvring the atomic sections into their intended positions.

You can select any of the pieces with a joystick outline cursor and 'launch' them in one of four directions - they will slide continuously until hindered by another component or the walls of the playing area, which are specifically designed to make things increasing tricky on the higher levels. For example, it may only be possible to construct the compound at one location on the playfield. Ingenious techniques are therefore needed to overcome the problems (ex-Rubik's cube freaks should encounter no difficulties!) and speedy decision making is essential to beat the uncompromising timer. As if all this wasn't enough to keep you burning the midnight oil, at the end of each level you are presented with a multiple-choice question concerning the identification of the respective compound. Get it right and you progress onto the next level, but get it wrong and you have to do the current one all over again! Thankfully the game always continues on the highest uncompleted level - that is, until you are eventually persuaded to switch it off.

Microx is superbly presented from beginning to end. The graphics are clearly the result of careful attention to detail whilst different events in the game are accompanied musically by several pleasant jingles. The game is extremely addictive though not excessively frustrating, thereby earning a very strong recommendation from me!

Title: ***MICROX***
Publisher: ***Avalon***
Supplier: ***Micro Discount***
Format: ***Disk***
Price: ***£6.95***
Reviewer: ***Paul Rixon***

QUICK SUPPORT DISK 1

In the last issue of NAU I reviewed an 8-bit programming language that is being used to write many of the latest games from Germany - and is titled, not inappropriately, Quick. As with most software of this nature, a fair amount of learning is required to get the most out of the facilities on offer - in fact, the Germans have their own disk magazine dedicated to Quick. To help the growing number of enthusiasts both in Germany and overseas, the authors have now devised a series of support disks containing translated extracts from the disk magazine.

The QUICK SUPPORT DISK 1 is a doubled sided, dual density floppy (no joy for 810 users!) containing a total of thirteen tutorials, thirteen source code listings, two libraries, six header files and seven 'runnable' programs. The articles range from novice level to more than a tad on the tricky side, so that even established Quick programmers may discover something they didn't know before.

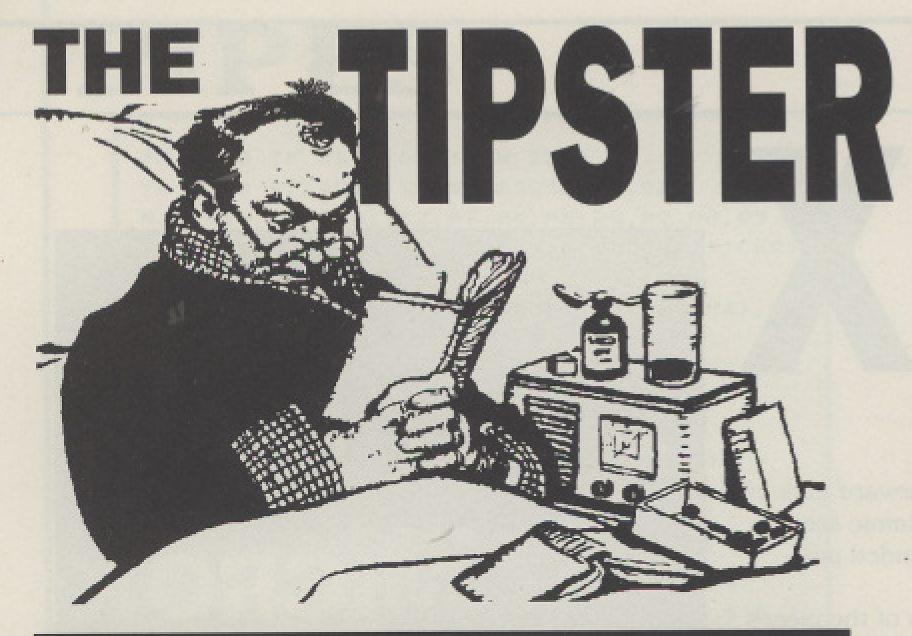
To start off there's a tutorial on the game of Life, together with fully documented Quick source code and a ready-to-run program file. This famous and intriguing concept is all about cells and elements, reproducing and terminating according to pre-determined rules. It serves to illustrate the use of arrays in programming, as well as posing philosophical questions! Help on creating large and two-dimensional arrays can be found in a separate article. Display list interrupts - a subject that non-machine code fanatics are usually keen to avoid - are explained in full and elsewhere there is detailed information about reset-resident programs, player missile graphics and string sorting techniques. For touch tablet users, a tutorial and library files are included whilst 'C' like header files are also provided for implementing variables which correspond to commonly used memory addresses.

Browsing through the tutorial files is effortless with the aid of (mandatory) joystick control, but if you want to read them away from the computer then any or all documents can be directed to an Epson or Atari compatible printer.

If you are in the process of learning Quick then this Quick Support Disk, and presumably all future releases in this series, have to be considered an essential purchase. If you're about to invest in the Quick language then it's worthwhile knowing that a discount is available if you buy the Support Disk at the same time.

Title: ***QUICK SUPPORT DISK 1***
Publisher: ***Power Per Pro***
Supplier: ***Dean Garraghty***
Format: ***Disk***
Price: ***£4.95***
Reviewer: ***Paul Rixon***

THE TIPSTER



Live long and prosper is the Vulcan outlook on life and I believe that is what it should be for this issue. With more new tips coming in and masses of help with Zork I things are OK for this issue.

This shilly shallying is just wasting column inches, so on with the show. (One of these days I'm going to write a novel that fits in this part of the article!)

FOOTBALLER OF THE YEAR

From Mark Reeder of Rotherham in South Yorkshire comes help with Footballer of the Year.

Start off in the Super League and don't play a game, don't even buy goal cards, just keep accumulating money. After about 5 seasons start buying goal cards, you're bound to be transferred to division 4 where you can buy loads of goal cards. Never buy more than 90 otherwise it goes back down to 0 again and you don't want that now do you?

Also from Mark is help with Cosmic Pirate and Hardball.

When using the simulator in Cosmic Pirate always try number 2 as this is the easiest. When playing Hardball choose Pepi Perez for pitcher as he has a brilliant range of pitches especially sinkers and sliders.

LEAGUE CHALLENGE

Mark's brother has also sent some stuff in as well but this time it's a bit more complicated so get your fingers ready as here we go into the innards of League Challenge.

When the first part of the program is loaded rewind the tape a few counts and press space. This should cause the game to crash so that you can delve into the lines of text. Firstly press RETURN until the error messages have gone then you can do the following:

Type 65 and press RETURN, this now means you can have more than 11 players.

Type LIST 210,220 and, hey presto!, you can change the players names. You can find the other lines i.e. which stop you getting knocked out of the cup, those that allow you to spend as much as you like and what about having a squad with 22 players?

The cupboard is bare, so what we need from you is ... TIPS, TIPS .... get the message!!

ZORK

Following the appeal from last time for help with Zork I two people have responded. Kevin Grant of Barcombe and Allan J Palmer (our very own Mailbag editor) have come up trumps with hints and tips for this exciting adventure.

Those sections in [ ] are the complete solutions.

Q. How do you get to the Land of the Dead to collect the Crystal Skull?

A. You need to exorcise the spirits!

There's a book on the altar you can read to give you a hint - and think of Edgar Allen Poe ... what other objects might prove useful?

[RING BELL, LIGHT THE CANDLES AND READ THE BLACK BOOK]

Q. How to get from Resevoir south to the Trunk of Jewels?

A. The trunk is underwater. You can't dive, so you must get rid of the water. The dam lies east of Resevoir south doesn't it?

You'll have to fix some mechanics to achieve this ....

[ACTIVATE THE CONTROL PANEL IN THE MAINTENANCE ROOM TO OPEN THE DAM, THEREBY DRAINING THE RESEVOIR]

Q. How to get to the Strange Passage at the start?

A. You can't get to the Strange passage without the assistance of another inhabitant of the underground empire - you'll need to deal with the Cyclops in a particular way to do this.

Reading the black book may help BUT this is not necessary to complete the game

[SAY "ODYSSEUS" TO THE CYCLOPS AND HE'LL RUSH OUT THROUGH THE STRANGE PASSAGE GIVING YOU ACCESS]

Q. At the start how do you open the grate?

A. The grate is locked - you need a key to open it. It can only be unlocked from below - the key is underground

[NATURALLY YOU'LL NEED A SKELETON KEY - FOUND IN THE ADVENTURERS SKELETON IN THE UNDERGROUND MAZE, ONE PART LEADS TO BENEATH THE GRATING]

Kevin Grant covers some of the sections above but some of the sections he doesn't are below.

If you want to get down from the dome to the torch room you should Type "TIE ROPE TO RAILING" (the rope you find in the attic of the house). When you have done this go down and you are in the room.

Another way of getting to the other side of the resevoir is to touch the mirror in mirror south and you should travel through the mirrors to one room north of mirror north on the other side of the reservoir.

Finally if you manage to get into the house at the beginning go into the living room and take the lantern and sword. Type "light lantern" and then go to the kitchen. Type "u" and you'll be in the attic. Get the rope and then back down to the kitchen and into the living room. Push the rug and open the trap door. Take the lit lantern and sword and start the adventure properly.

QUICKIES

A couple of quickies come from that old stalwart(?) Kevin Cooke of Exeter.

OPERATION BLOOD

When the game starts, pause it and move your sights to any person on the screen. Then, quickly un-pause, shoot the enemy and pause again. Doing this will allow you to save bullets, and stop many of the enemies shots from hitting you.

TAGALON

Start Tagalon as normal in two player mode and walk player two around until you meet player one. From then on, always send player two into any room you want to explore so he can dispose of any nasties before player one enters the room. Player one can then collect any special items for when player two dies. This should allow you to start with having full energy while still being in the game.

ZERO WARS

The following level codes are from Henry Knowles (hello again Henry) for ZERO WARS. He's not to sure of the order but he does know that BASE is the first one.

BASE
SHIP
MOON
STAR
ZERO
HIGH

Also on the lower levels in particular, when it says "shoot protectors to gain energy" it is often worth missing the first canister, just to refill on energy.

ADVENTURELAND

A treat now, from J. Hough, a complete solution to a Scott Adams game - ADVENTURELAND, and it's forwards. You don't have to read it backwards. Isn't that just wonderful? To tell you the truth its a quarter to one on a Sunday morning and I should have been in bed two hours ago!

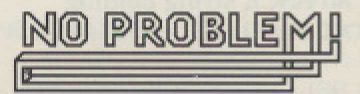
[During the solution check your inventory [I] often. If bitten by chiggers "GET MUD"]

Remember this is the complete solution so don't read on further than you need.

E, E, GET AXE, S, GO HOLE, GET FLINT, U, W, GO TREE, GET KEYS, D, CHOP TREE, GO TREE, D, GET RUBIES, U, DROP RUBIES, SCORE, DROP KEYS, DROP FLINT, U, E, N, N, GET OX, SAY BUNYON, SWIM, S, W, W, GET OX, GET FRUIT, SCORE, GET LAMP, GET FLINT, GET KEYS, D, GO HOLE, OPEN DOOR, DROP KEYS, GO HALL, LIGHT LAMP, D, S, GET BLADDER, N, D, D, W, UNLIGHT LAMP, RUB LAMP, RUB LAMP, LIGHT LAMP, GET RING, GET BRACELET, D, GET RUG, UNLIGHT LAMP, SAY AWAY, SAY AWAY, S, GO TREE, DROP RING, DROP BRACELET, U, GET GAS, GO TREE, D, GO HOLE, GO HALL, LIGHT LAMP, D, S, U, DROP BLADDER, LIGHT GAS, GO HOLE, JUMP, YELL, GET MIRROR, GO THRONE, GET CROWN, W, JUMP, GET BRICKS, D, N, D, D, W, D, D, DAM LAVA, DROP BRICKS, GET NET, UNLIGHT LAMP, SAY AWAY, SAY AWAY, S, GO TREE, DROP LAMP, DROP FLINT, DROP CROWN, DROP RUG, DROP MIRROR, GET BOTTLE, U, N, E, GET FISH, S, W, GET MUD, GO TREE, DROP FLINT, GET RUG, D, GO HOLE, GO HALL, LIGHT LAMP, D, N, N, DRINK WATER, GET HONEY, GET BEE, S, DROP MUD, UNLIGHT LAMP, SAY AWAY, SAY AWAY, DROP BOTTLE, S, GO HALL, LIGHT LAMP, D, N, GET MUD, SAY AWAY, SAY AWAY, GET BOTTLE, DROP BEE, GET EGG, D, GO HOLE, GO WALL, LIGHT LAMP, D, D, D, W, D, D, DROP WATER, GET FIRESTONE, UNLIGHT LAMP, SAY AWAY, SAY AWAY, S, GO TREE, DROP FIRESTONE, DROP RUG, SCORE.

THE TAIL OF BETA LYRAE

If you type in **TRACE POWER** on the title screen you will go to sector 5 after a life. This will work on any level. Thanks go to Steven Head of Willenhall (hi again Steve!!)



FREE CASSETTES!

If your hint, tip or map is used by The Tipster you can claim a FREE CASSETTE (from those currently available from The Accessory Shop) but you won't get one if you don't send something to The Tipster - get tipping now!

HOW TO CLAIM

If you see your name in this column just drop us a line and say 'My name is ..... and I claim my free Tipster cassette' and simply tell us which cassette you would like (give an alternative just in case). We will whip it off to you poste haste (or straight away). If you prefer you can always give us a ring instead on the usual number

CALLING INTERNATIONAL RESCUE !!! ..... COME IN PLEASE !!!

Allan J. Palmer asks if Michelle and Lisa Trinder would confirm that they are playing **ZORK I** or **ZORK II** as there is no bank in ZORK I. If you drop Allan a line at his mailbag address then he'll help you out.

Simon Reeder would like help on **WHIRLINURD**, **SPACE RIDER** and **GOLDEN BATON**.

That just about wraps it up for this issue folks so don't forget to join me next time, same time, same planet for another rip snorting TIPSTER column.

All of those letters that you are going to send in go to:

THE TIPSTER
NEW ATARI USER
P.O. BOX 54
STAFFORD
ST16 1DR

(keep those letters and maps coming in - Gem Warrior maps next time!)

EXTENDING THE MAC

1. INCLUDE Macros - CIO

Paul Abbot has some handy routines for those of you who like to dabble in machine language

I have used the Atari Macro Assembler for a number of years, and over that time I have developed a number of macros for my own use. Well I had to as the assembler doesn't come with any of its own macros. I tend to hold my macros in include files, each class of macro having a separate file - maths, user interface, and the most regularly used ... CIO.

The CIO macros are the ones listed here, they cover the standard CIO operations; opening, closing, reading, writing, etc.

The following list covers each macro, its actions, usage, and parameters.

OPEN *<chan> <mode> <dev>*

This macro contains the necessary code to open channel CHAN in mode MODE to device DEV. The channel can be any number from 0 - 7 (it isn't checked). The mode should be one of the usual values (i.e. 4=read, 8=write, etc.). The device should be the address of the start of an ASCII string holding the device name (eg. "S:", "D1:FILE.TXT", etc.).

CLOSE *<chan>*

This macro closes channel CHAN, again the channel can be any value from 0 to 7.

NOTE *<chan>*

This macro is for use with the "D:" device, it returns the read/write position in the file currently opened on channel CHAN. To obtain the position bytes use the following lines of code (after the macro);

```
LDA ICAX3,X
LDA ICAX4,X
LDA ICAX5,X
```

How you should interpret the bytes will depend upon which DOS you are using, e.g. in DOS 2.5 ICAX3,4 hold the sector number and ICAX5 the byte offset. (ICAX3-5 may be defined in your SYSTEXT file, if they are not you will need to define them yourself).

POINT *<chan> <b1> <b2> <b3>*

Point is the reverse of Note it sets the position of the read/write pointer in the opened file. The position is specified in the three parameters; B1, B2 and B3. The reason that I decided to use this format is that I use both DOS2.5 and Sparta DOS and each interprets the bytes differently.

WRITE *<chan> <maxlen> <bufadr>*

This is the next major macro, it can be used to write out text messages (with CR) to channel CHAN of length MAXLEN, where the message starts at address BUFADR. If the text contains a CR character before the end, the system will only print up to the CR omitting the rest of the text.

READ *<chan> <maxlen> <bufadr>*

This macro is equivalent to the BASIC command INPUT, it can be used to read a line of text (terminated by CR) into a buffer which starts at BUFADR from channel CHAN, where MAXLEN represents the size of the buffer.

PUT *<chan> <len> <bufadr>*

This macro writes a fixed number of bytes (LEN) to channel CHAN from buffer BUFADR.

GET *<chan> <len> <bufadr>*

This macro is the reverse of PUT, it reads LEN bytes from channel CHAN into buffer BUFADR.

PUTX1 *<chan> <lenadr> <bufadr>*

PUTX1 is a variation of the macro PUT. With PUT the number of bytes to write was defined at assembly time but there are occasions when one doesn't know, at assembly time, how many bytes will need to be written. This is where this macro comes in. The second parameter (LENADR) doesn't specify the number of bytes to be written but the address at which it can be found (16 bit no.).

GETX1 *<chan> <lenadr> <bufadr>*

Once again this macro is a variation, this time of GET, and again the second parameter is the address at which the 16 bit length can be found (LENADR,LENADR+1).

PUTB *<chan> <byte>*

This macro is equivalent to the BASIC PUT statement, it writes a single byte BYTE to channel CHAN. Note: BYTE should be a number and not a string, the assembler doesn't like passing strings as parameters.

ACRO ASSEMBLER

```
* Include file containing all
* CIO IO operations as MACROS
* for use with MACRO ASSEMBLER.
*
* by Paul Abbott (5/12/91)
* - modified (14/1/92)
* - expanded (1/8/92)
*

; OPEN
; Open a file, file name must
; already have been specified.
;
; PARAMETERS:
; CHANNEL - Channel number eg 1
; MODE - IO mode eg 4=read
; NAME - Address of device name

OPEN: MACRO CHANNEL, MODE, NAME
  LDX #[%1 SHL 4]
  LDA #3
  STA ICCOM,X
  LDA #%2
  STA ICAX1,X
  LDA #LOW[%3]
  STA ICBAL,X
  LDA #HIGH[%3]
  STA ICBAH,X
  JSR CIOV
ENDM

; CLOSE
; Close a specified channel.
;
; PARAMETERS:
; CHANNEL - Channel number eg 1

CLOSE: MACRO CHANNEL
  LDX #[%1 SHL 4]
  LDA #12
  STA ICCOM,X
  JSR CIOV
ENDM

; NOTE
; Return current position in file.
;
; PARAMETERS:
; CHANNEL - Channel number eg 1

NOTE: MACRO CHANNEL
  LDX #[%1 SHL 4]
  LDA #38
  STA ICCOM,X
  JSR CIOV
ENDM

; POINT
; Set position in file.
;
; PARAMETERS:
; CHANNEL - Channel number eg 1
; PB1-PB3 - Position bytes

POINT: MACRO CHANNEL, B1, B2, B3
  LDX #[%1 SHL 4]
  LDA #37
  STA ICCOM,X
  LDA %2
  STA ICAX3,X
  LDA %3
  STA ICAX4,X
  LDA %4
  STA ICAX5,X
  JSR CIOV
ENDM

; WRITE
; Write out a line of text, up to
; max.length or EOL character.
;
; PARAMETERS:
; CHANNEL - Channel number eg 1
; MAXLEN - Maximum length of line.
; BUFER - Address of data buffer

WRITE: MACRO CHANNEL, MAXLEN,
BUFER
  LDX #[%1 SHL 4]
  LDA #9
  STA ICCOM,X
  LDA #LOW[%2]
  STA ICBLL,X
  LDA #HIGH[%2]
  STA ICBLH,X
  LDA #LOW[%3]
  STA ICBAL,X
  LDA #HIGH[%3]
  STA ICBAH,X
  JSR CIOV
ENDM

; READ
; Read in a line of text placing
; into a memory buffer.
;
; PARAMETERS:
; CHANNEL - Channel number eg 1.
; MAXLEN - Maximum length of line.
; BUFER - Address data buffer.

READ: MACRO CHANNEL, MAXLEN,
BUFER
  LDX #[%1 SHL 4]
  LDA #5
  STA ICCOM,X
  LDA #LOW[%2]
  STA ICBLL,X
  LDA #HIGH[%2]
  STA ICBLH,X
  LDA #LOW[%3]
  STA ICBAL,X
  LDA #HIGH[%3]
  STA ICBAH,X
  JSR CIOV
ENDM

; PUT
; Write out a block of bytes.
;
; PARAMETERS:
; CHANNEL - Channel number eg 1
; LENGTH - Block size.
; BUFER - Address of data buffer

PUT: MACRO CHANNEL, LENGTH, BUFER
  LDX #[%1 SHL 4]
  LDA #11
  STA ICCOM,X
  LDA #LOW[%2]
  STA ICBLL,X
  LDA #HIGH[%2]
  STA ICBLH,X
  LDA #LOW[%3]
  STA ICBAL,X
  LDA #HIGH[%3]
  STA ICBAH,X
  JSR CIOV
ENDM

; GET
; Read in a block of bytes into a
; memory buffer.
;
; PARAMETERS:
; CHANNEL - Channel number eg 1.
; LENGTH - Block size.
; BUFER - Address data buffer.

GET: MACRO CHANNEL, LENGTH, BUFER
  LDX #[%1 SHL 4]
  LDA #7
  STA ICCOM,X
  LDA #LOW[%2]
  STA ICBLL,X
  LDA #HIGH[%2]
  STA ICBLH,X
  LDA #LOW[%3]
  STA ICBAL,X
  LDA #HIGH[%3]
  STA ICBAH,X
  JSR CIOV
ENDM

; PUTX1
; Write out a block of bytes, as
; C_PUT except the length is memory
```

continued

MACROS continued

```
;
; PARAMETERS:
; CHANNEL - Channel number eg 1
; LENADR - Address of block size.
; BUFER - Address of data buffer

PUTX1: MACRO CHANNEL, LENADR,
BUFER
  LDX #[%1 SHL 4]
  LDA #11
  STA ICCOM,X
  LDA %2
  STA ICBLL,X
  LDA %2+1
  STA ICBLH,X
  LDA #LOW[%3]
  STA ICBAL,X
  LDA #HIGH[%3]
  STA ICBAH,X
  JSR CIOV
ENDM

; GETX1
; Read in a block of bytes into a
; memory buffer.
;
; PARAMETERS:
; CHANNEL - Channel number eg 1.
; LENADR - Address of block size.
; BUFER - Address data buffer.

GETX1: MACRO CHANNEL, LENADR,
BUFER
  LDX #[%1 SHL 4]
  LDA #7
  STA ICCOM,X
  LDA %2
  STA ICBLL,X
  LDA %2+1
  STA ICBLH,X
  LDA #LOW[%3]
  STA ICBAL,X
  LDA #HIGH[%3]
  STA ICBAH,X
  JSR CIOV
ENDM

; PUTB
; Write out a single byte.
;
; PARAMETERS:
; CHANNEL - Channel number eg 1
; BYTE - Byte to write.

PUTB: MACRO CHANNEL, BYTE
  LDX #[%1 SHL 4]
  LDA #11
  STA ICCOM,X
  LDA #0
  STA ICBLL,X
  STA ICBLH,X
  LDA #%2
  JSR CIOV
ENDM

; PUTA
; Write out a single byte, in A.
;
; PARAMETERS:
; CHANNEL - Channel number eg 1

PUTA: MACRO CHANNEL
  TAY
  LDX #[%1 SHL 4]
  LDA #11
  STA ICCOM,X
  LDA #0
  STA ICBLL,X
  STA ICBLH,X
  TYA
  JSR CIOV
ENDM

; GETA
; Read in a single byte.
;
; PARAMETERS:
; CHANNEL - Channel number eg 1

GETA: MACRO CHANNEL
  LDX #[%1 SHL 4]
  LDA #7
  STA ICCOM,X
  LDA #0
  STA ICBLL,X
  STA ICBLH,X
  JSR CIOV
ENDM

; RENAME
; Rename disc file.
;
; PARAMETERS:
; CHANNEL - Any closed IO channel
; NAMES - Adr of OLD,NEW file names

RENAME: MACRO CHANNEL NAMES
  LDX #[%1 SHL 4]
  LDA #32
  STA ICCOM,X
  LDA #LOW[%2]
  STA ICBAL,X
  LDA #HIGH[%2]
  STA ICBAH,X
  JSR CIOV
ENDM

; DELETE
; Delete (Erase) disc file.
;
; PARAMETERS:
; CHANNEL - Any closed IO channel
; NAME - Adr of file name

DELETE: MACRO CHANNEL NAME
  LDX #[%1 SHL 4]
  LDA #33
  STA ICCOM,X
  LDA #LOW[%2]
  STA ICBAL,X
  LDA #HIGH[%2]
  STA ICBAH,X
  JSR CIOV
ENDM

; LOCK
; Lock disc file.
;
; PARAMETERS:
; CHANNEL - Any closed IO channel
; NAME - Adr of file name

LOCK: MACRO CHANNEL NAME
  LDX #[%1 SHL 4]
  LDA #35
  STA ICCOM,X
  LDA #LOW[%2]
  STA ICBAL,X
  LDA #HIGH[%2]
  STA ICBAH,X
  JSR CIOV
ENDM

; UNLOCK
; Unlock disc file.
;
; PARAMETERS:
; CHANNEL - Any closed IO channel
; NAME - Adr of file name

UNLOCK: MACRO CHANNEL NAME
  LDX #[%1 SHL 4]
  LDA #36
  STA ICCOM,X
  LDA #LOW[%2]
  STA ICBAL,X
  LDA #HIGH[%2]
  STA ICBAH,X
  JSR CIOV
ENDM

; FORMAT
; Format disc, dive number held in A.
;
; PARAMETERS:
; CHANNEL - Any closed IO channel
; DRIVE - Drive to format eg."D1:"

FORMAT: MACRO CHANNEL DRIVE
  LDX #[%1 SHL 4]
  LDA #254
  STA ICCOM,X
  LDA #LOW[%2]
  STA ICBAL,X
  LDA #HIGH[%2]
  STA ICBAH,X
  JSR CIOV
ENDM

; PRINT
; Print a line of text on channel
; 0 with EOL.
;
; PARAMETERS:
; TEXT - Text to print.

PRINT: MACRO TEXT
  LDX #0
  LDA #9
  STA ICCOM
  LDA #LOW[LSTR '%1']
  STA ICBLL
  LDA #HIGH[LSTR '%1']
  STA ICBLH
  LDA #LOW[?1%K]
  STA ICBAL
  LDA #HIGH[?1%K]
  STA ICBAH
  JSR CIOV
  JMP ?2%K
?1%K: DB '%1'
?2%K:
ENDM
```

```
*
* CIO.INC Demo program
* Check if entered file exists.
*
* by Paul Abbott (4/8/92)
*

  INCLUDE D:CIO.INC

  ORG $4000

START:
  PUT 0, 24, M1 ; Print prompt on
                ; screen
  READ 0, 30, BUFF ; Get file name

  PUT 0, 8, M2 ; Option prompt
  GETA 0
  CMP #'D'
  BNE NDEL
  DELETE 1, BUFF
  JMP EXIT
NDEL: CMP #'L'
  BNE NLOC
  LOCK 1, BUFF
  JMP EXIT
NLOC: CMP #'R'
  BNE NREN
  RENAME 1, BUFF
  JMP EXIT
NREN: CMP #'U'
  BNE NULOC
  LOCK 1, BUFF
EXIT: BMI ERR
NULOC: RTS
ERR: PRINT I/O ERROR ;
  RTS

M1: DB 'Please enter file name :'
M2: DB 'Option :'

BUFF:

  END START
```

```
*
* CIO.INC Demo program
* Enter drive and format it.
*
* by Paul Abbott (7/8/92)
*

  INCLUDE D:CIO.INC

  ORG $4000

START:
  PUT 0, 18, M1 ; Print prompt on
                ; screen
  READ 0, 5, BUFF ; Get file name

  FORMAT 1, BUFF ; Format drive
  BMI NOFILE

  WRITE 0, 40, M2
  LDA #'.'
  PUTA 0
  RTS

NOFILE:
  WRITE 0, 40, FNF
  RTS

M1: DB 'Enter drive name :'
M2: DB 'Format OK',$9B
FNF DB 'Format fail..',$9B

BUFF:

  END START
```

```
*
* CIO.INC Demo program
* Check if entered file exists.
*
* by Paul Abbott (1/8/92)
*

  INCLUDE D:CIO.INC

  ORG $4000

START:
  PUT 0, 24, M1 ; Print prompt on
                ; screen
  READ 0, 30, BUFF ; Get file name
  CLOSE 1

  OPEN 1, 4, BUFF ; Try to open file
  BMI NOFILE

  PRINT FILE FOUND ; One way of
  JMP CLOF ; printing a
           ; message
NOFILE:
  WRITE 0, 40, FNF ; Another way

CLOF: CLOSE 1
  RTS

M1: DB 'Please enter file name :'
FNF: DB 'File not found', $9B

BUFF:

  END START
```

PUTA *<chan>*
PUTA sends the contents of the accumulator to channel CHAN. The byte written by PUTA is determined at run time whereas the byte written by PUTB is defined at assembly time.

GETA *<chan>*
GETA reads a single byte from channel CHAN and returns with it in the accumulator.

RENAME *<chan> <names>*
This macro provides the standard DOS function, rename. CHAN should be any closed channel, and NAMES should be the address of the text string holding the old and new names, in the standard format i.. "D1:OLD.NAM,NEW.NAM"

DELETE *<chan> <name>*
DOS function delete, again CHAN should be closed and NAME should point to the name of the file to delete.

LOCK *<chan> <name>*
DOS function file lock, for parameters see delete.

UNLOCK *<chan> <name>*
DOS function file unlock, parameters as delete.

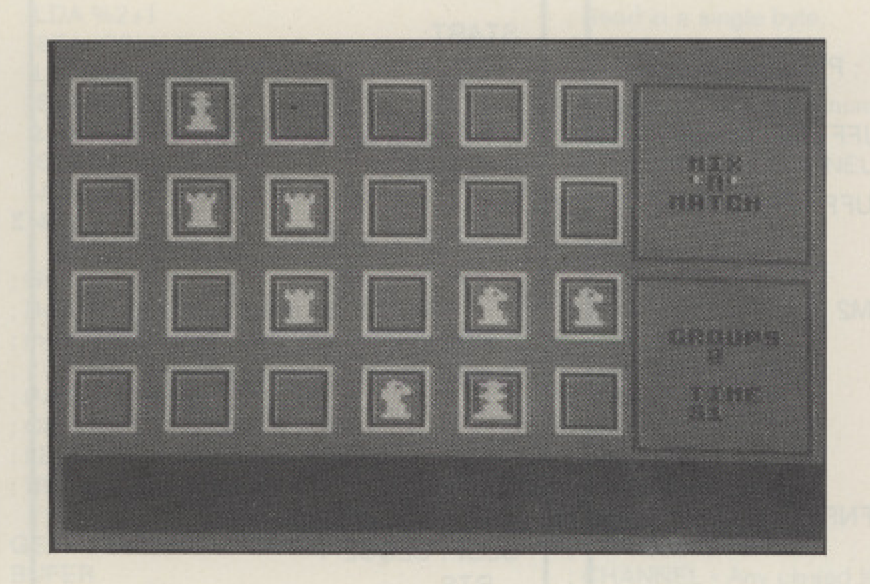
FORMAT *<chan> <drive>*
DOS function disk format, CHAN can be any closed channel and DRIVE should point to the text string specifying the drive to format, e.g. "D2:".

PRINT *<text>*
The macro sends the text string (TEXT) to channel 0 (screen), similar to write. With the WRITE macro the text string had to be stored in memory and its address passed to the macro, with PRINT the string itself is passed, and the macro deals with memory allocation for the string. The major limitation with PRINT is that quoted strings cannot be passed as parameters (the assembler doesn't like them) so all strings of characters will be printed in uppercase.

The last instruction of each macro is "JSR CIOV" and so after the macro the Y register will hold the status code and the -ve flag will be set or clear. To detect errors simply use the normal CIOV error detection code.

This is not an exhaustive list of CIO macros just the ones I have found useful to develop. I had a few problems while developing these macros, there seem to be a few unwritten rules, but in their current form they work. Type them in exactly as they are printed and you should have few problems. I have also included a few example programs demonstrating the macros in use.

MIX 'N' MATCH



Mix 'n' Match is a simple "concentration" type game which uses an Antic 4 screen and redefined characters in the shape of chess pieces. The aim of the game is to find - and match - groups of pictures which are hidden behind boxes on the screen. In this version you must match 8 sets of 3 chess pieces - white knight, white pawn, white rook, black rook, white bishop, black bishop, white king and white queen.

USING THE PROGRAM

When you run the program you will see 24 boxes on the screen, in 4 rows of 6 each. Use a joystick to move the flashing square over the box you want and press fire to reveal the picture beneath. Do the same again for 2 more boxes of your choice. If all 3 pictures match, the chess pieces will stay on the screen; otherwise the pictures are concealed again. The game continues until you have found all 8 groups. A panel at the right of the screen shows both the time taken and the number of groups matched at any stage of the game. You are given a "Play Again" option when the game is over.

by
Ann O'Driscoll
and Phil Cardwell

```
HY 10 REM ********************************
IC 20 REM *        MIX 'N' MATCH          *
YI 30 REM *             by                *
TJ 40 REM *        Phil Cardwell &        *
ET 50 REM *        Ann O'Driscoll         *
CV 60 REM *------------------------------*
LW 70 REM * NEW ATARI USER - OCT 1993    *
IF 80 REM ********************************
EQ 100 DIM CC$(1024):GOSUB 790
TY 110 PMMOVER=1540:P0DLI=1536:GOSUB 700
NB 120 BOX=510:MM=0:PX0=52:PY0=40:HP0=532
   48:SCORE=0:TIME=0
YA 130 DIM B$(31),B(24),P$(56),A$(7),E$(1
   0),F$(10),PAGCLR$(28)
IO 140 E$="┌────────┼":F$="▄────────┤ "
MD 150 P$="ab↓←←cdef↓←←ghij↓←←klmn↓←←goqr
   ↓←←post↓←←cduv↓←←wxyz↓←← ◢◣"
GH 160 B$="├│├↓←←←←←┤  ┐↓←←←←←┤  ┐↓←←←←←╱╲╲
   ◢"
UN 170 PAGCLR$="hh.Lh.Khh.M)♥(*.KHP♦fLhdM
   Pt◆":PAGCLR=ADR(PAGCLR$)
DG 180 FOR N=1 TO 24:B(N)=0:NEXT N:FOR PI
   C=1 TO 8:FOR N=1 TO 3:B=INT(RND(0)*24+
   1)
QO 190 IF B(B)=0 THEN 220
FY 200 B=B+1:IF B>24 THEN B=1
PE 210 GOTO 190
VK 220 B(B)=PIC:NEXT N:NEXT PIC
GC 230 REM  PLAYER MISSILE SET UP
KW 240 GRAPHICS 0:PMB=8*(INT(PEEK(742)/8)
   -1):PMBASE=PMB*256:POKE 54279,PMB
VV 250 X=USR(PAGCLR,PMBASE,8)
BQ 260 RESTORE 270:FOR N=0 TO 15:READ D:P
   OKE PMBASE+N,D:NEXT N:FOR N=0 TO 15:RE
   AD D:POKE PMBASE+20+N,D:NEXT N
JS 270 DATA 255,129,129,129,129,129,129,1
   29,129,129,129,129,129,129,129,255
PO 280 DATA 0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
   ,0
YM 290 POKE 704,6:POKE 53256,0:POKE 559,5
   8:POKE 53277,2:POKE 623,4
UI 300 REM  GAME SCREEN
XT 310 POKE 82,0:POKE 752,1:POKE 756,MTOP
EA 320 POKE 708,144:POKE 709,12:POKE 710,
   0:POKE 712,165
UY 330 DL=PEEK(560)+256*PEEK(561):POKE DL
   +3,PEEK(DL+3)+2:FOR N=6 TO 24:POKE DL+
   N,PEEK(DL+N)+2:NEXT N
IS 340 POKE DL+1,240:POKE 54286,64:GOSUB
   690:POKE 54286,192
VJ 350 FOR C=0 TO 25 STEP 5:FOR R=0 TO 15
   STEP 5:POSITION C,0+R:? B$:NEXT R:NEX
```

```
   T C
ZM 360 FOR N=0 TO 10 STEP 10:POSITION 29,
   N:? E$:POSITION 29,9+N:? F$:NEXT N
QW 370 FOR N=1 TO 11 STEP 10:FOR M=0 TO 7
   :POSITION 29,M+N:? "+":POSITION 38,M+N
   :? "+":NEXT M:NEXT N
OR 380 POSITION 32,4:? "MIX":POSITION 32,
   5:? "'N'":POSITION 31,6:? "MATCH"
KE 390 POSITION 31,13:? "GROUPS":POSITION
    33,14:? MM
XM 400 POSITION 32,16:? "TIME"
HQ 410 GOSUB BOX:A1=P:A2=X:A3=Y:A4=I:B(I)
   =-B(I)
LE 420 GOSUB BOX:B1=P:B2=X:B3=Y:B4=I:B(I)
   =-B(I)
HN 430 GOSUB BOX:C1=P:C2=X:C3=Y:B(A4)=-B(
   A4):B(B4)=-B(B4)
BO 440 FOR D=1 TO 15:NEXT D:IF A1=B1 AND
   B1=C1 THEN 470
LC 450 X=A2:Y=A3:GOSUB 460:X=B2:Y=B3:GOSU
   B 460:X=C2:Y=C3:GOSUB 460:GOTO 410
EE 460 POSITION X,Y:? B$:RETURN
MC 470 B(A4)=0:B(B4)=0:B(I)=0:MM=MM+1:POS
   ITION 33,14:? MM:FOR D=1 TO 4:SOUND 0,
   20,10,8:FOR DD=1 TO 5:NEXT DD
CG 480 SOUND 0,0,0,0:NEXT D:IF MM=8 THEN
   GOTO 630
NQ 490 GOTO 410
EV 500 REM  MOVE POINTER ROUTINE LOOP
FP 510 IF  NOT STRIG(0) THEN 590
AK 520 S=STICK(0):IF S=15 THEN 560
NT 530 X=USR(PMMOVER,PMBASE+20,PMBASE+102
   4+PY0,16)
WG 540 PX0=PX0+20*(S>4 AND S<8 AND PX0<14
   0)-20*(S>8 AND S<12 AND PX0>52)
MO 550 PY0=PY0+40*(S=13 AND PY0<160)-40*(
   S=14 AND PY0>40)
EM 560 TIME=TIME+1:POSITION 32,17:? INT(T
   IME/10):X=USR(PMMOVER,PMBASE,PMBASE+10
   24+PY0,16)
BZ 570 POKE HP0,PX0:FOR D=1 TO 15:NEXT D:
   GOTO 510
FU 580 REM -- PICK A SQUARE BIT --
AL 590 X=(PX0-52)/4:Y=(PY0-40)/8:I=INT(Y/
   5)*6+INT(X/5)+1:IF B(I)<1 THEN 520
CG 600 P=B(I):A$=P$(7*(P-1)+1,7*P):POSITI
   ON X+1,Y+1:? A$:SOUND 0,72,10,8:FOR D=
   1 TO 15:NEXT D:SOUND 0,0,0,0
ZE 610 RETURN
AP 620 REM  GET THEM ALL RIGHT
HY 630 POKE 53277,0:POSITION 7,22:? "PLAY
    AGAIN Y/N?"
ZU 640 CLOSE #3:OPEN #3,4,0,"K:"
MM 650 GET #3,K:IF K<>78 AND K<>89 THEN 6
   50
IN 660 IF K=89 THEN RUN
HT 670 GRAPHICS 0:POKE 82,2:POKE 752,0:CL
   R :END
SK 680 REM  SET DLI
KB 690 DLI1=INT(PODLI/256):DLI2=PODLI-256
   *DLI1:POKE 512,DLI2:POKE 513,DLI1:RETU
   RN
VU 700 RESTORE 720:FOR A=1536 TO 1626:REA
   D B:POKE A,B:NEXT A:RETURN
HI 710 REM  DLI DATA TO PAGE 6
EF 720 DATA 142,18,208,64
CV 730 REM  PMMOVER DATA
JK 740 DATA 104,201,3,208,81,104,133,225,
   104,133,224,104,133,227,104,133,226,10
   4,133,229
BS 750 DATA 104,133,228,169,0,133,230,133
   ,231,168,177,224,145,226,24,169,1,101
VG 760 DATA 224,133,224,169,0,101,225,133
   ,225,24,169,1,101,226,133,226,169,0,10
   1,227,133,227,24
FA 770 DATA 169,1,101,230,133,230,169,0,1
   01,231,133,231,24,165,228,197,230,208,
   206,165,229,197,231,208,200,96
VK 790 MTOP=PEEK(106)-4
ZM 800 POKE 106,MTOP-4:GRAPHICS 0
CM 810 D=PEEK(140)+PEEK(141)*256:R=PEEK(1
   34)+PEEK(135)*256
WX 820 Q=MTOP*256-D:R1=INT(Q/256):T=Q-R1*
   256
OF 830 POKE R+2,T:POKE R+3,R1
MA 840 CC$(LEN(CC$)+1)="♥♥♥♥♥♥♥♥♥┴┴┴┴┴♥┴♥♥
   fff♥♥♥♥eePPPPTT├├┐┐┐┐▬├ ├├┐├├ePeePPe
   e♥┴┴┴♥♥♥♥♥♥♥♥♥♥├┐ ♥♥♥♥♥ePP"
XJ 850 CC$(LEN(CC$)+1)="♥f<◘<f♥♥♥┴┴<┴┴♥♥♥
   ♥♥♥♥┴┴0♥♥♥<♥♥♥♥♥♥♥♥♥♥┴┴♥♥/▘┴0♦e♥♥?3333?
   ♥♥▘<▘▘▘?♥♥?3┘?0?♥♥?┘▖┘3?♥"
TR 860 CC$(LEN(CC$)+1)="♥0033?┘♥♥?0?┘3?♥♥
   ?0?33?♥♥?┘┘┘┘♥♥?3?33?♥♥?3?┘┘?♥♥♥┴┴♥┴┴
   ♥♥♥┴┴♥┴┴0/▘┴0┴▘/♥♥♥<♥♥<♥♥"
FW 870 CC$(LEN(CC$)+1)="♦0┴▘┴0♦♥♥<f▘┴♥┴♥♥
   <fnn♦>♥♥?33?33♥♥?3?33?♥♥?3003?♥♥<3333<
   ♥♥?0<00?♥♥?0<000♥♥?0033?♥"
VE 880 CC$(LEN(CC$)+1)="♥33?333♥♥?▘▘▘▘?♥♥
   ?┘┘┘3?♥♥33?<33♥♥00000?♥♥3?3333♥♥?33333
   ♥♥?3333?♥♥?33?00♥♥?3333?▘"
MS 890 CC$(LEN(CC$)+1)="♥?33<33♥♥?0?┘┘?♥♥
   ?▘▘▘▘▘♥♥33333?♥♥3333?▘♥♥3333?3♥♥33▘▘33
   ♥♥33?▘▘▘♥♥?┘┘?0?♥♥<┴┴┴┴<♥"
BZ 900 CC$(LEN(CC$)+1)="♥e♦0┴▘/♥♥x┴┴┴┴x♥♥
   ◢↑6c♥♥♥♥♥♥♥♥◘♥├AQUQA├♥♥***%%$$♥♥▓UU♥
   ♥♥♥◘◘XX┴┴$$$$$$$┴┴┴┴┴┴┴┴"
PY 910 CC$(LEN(CC$)+1)="$$%%****♥♥♥UU▓♥♥┴
   ┴XX◘◘♥♥┐┐┐┐┐┐▬PPPPPPTT├▬├├▬eTPeePT
   P├├┐┐▬UUeePPPTUU├┐┐▬"
WD 920 CC$(LEN(CC$)+1)="♥e♦•TTee♥♥♥▁♦♦♦♥
   ♥♥UU♥♥♥♥♥♥TT┤┤┤♦♦♦♦♦♦♦♦♦♦♦▁♥♥♥┤┤TT♥♥
   ♥┤┤┤┤┤┤┤┴┴┴◘◘♥♥♥PPPPPPPP"
OM 930 CC$(LEN(CC$)+1)="┴┴┴♦♦♥♥♥x♦x♦<┴♦♥♥
   ┴<<┴┴┴♥♥┴┴┴<<┴♥♥┴0<0┴♥♥♥▘<▘┴♥♥♥┴<<<┴
   ♥◣◣|◣|◘ ♥♥◘♥♥||◣◣◣**"
FH 940 CC$(LEN(CC$)+1)="♥♥♥  <<♥♥▥**◣◣♥
   ♥▛<<  ◣◣◣◣◣◣**▄▄▄▄▄▄ <<▐◣|◣*◣♥< ♥♥<
   ▇|◣◣◣*▓♥♥  <▓ ◣◣****"
RR 950 CC$(LEN(CC$)+1)="♥◘ <<<♥♥♥♥   <<|
   ◣◣◣◣** ◣|◣◣|♥ ♥♥ ♥♥♥♥♥♥♥ ◣◣♥♥♥♥♥♥▇
   ▇├┐┐├├ ├├e♦♦♦eePee├├┐┐▬"
QU 960 CC$(LEN(CC$)+1)="eeePPPTT♥♥┌┌▬┐┐♥
   ♥DDTTPP♥┴<<<┴<♥┴┴┴┴┴┴┴┴┴♥<x|nf/♥◢┴8x8┴◢
   ♥♦┴♦<♦┴♦♥"
UL 970 CC$(811,811)=CHR$(34):CC$(812,812)
   =CHR$(34)
PX 980 POKE 756,MTOP:RETURN
```

WHO YOU GONNA

WHEN YOU

Who's supporting your Atari? Is there anyone left? Well, yes - but you have to look a bit harder than before. The recent demise of both Robert Stuart's Excel and BaPAUG's 8:16 publications was a set-back for Atari users but thankfully there are still certain dedicated, enterprising individuals who help to ensure that the world's most revered 8-bit micro cannot be forgotten. Two such conscientious Atarians are Stuart Murray and Dean Garraghty, whose efforts have done much to safeguard the continuing existence of Atari 8-bit support in the UK.

BACK TO THE FUTURA

Stuart Murray's Futura magazine has been mentioned in these pages before (early issues can be obtained from Page 6) but it well deserves another since the quality of its content has maintained, if not exceeded, the standard set by the first few editions. Despite the pressures of University, work and many other things, Stuart has continued to head up the North Of Scotland Atari Users Group (NOSAUG) and produce Futura on a reasonably regular basis, in addition to providing services such as a PD library for tape and disk users. Stuart takes great pride in tracking down the best PD software for inclusion in Futura and has unearthed some cracking programs. Futura itself is no longer public domain and is available only by subscription - an understandable measure given the time and expense involved in the magazine's production. Cassette users don't miss out as the software (where appropriate) can also be obtained on tape, with or without a hard copy of the editorial matter. Just in case you're not convinced of Futura's good value, it's worth running through the highlights of some recent issues.

Futura 5, side A, boots up with a picture of an Atari 130XE before presenting a joystick-selectable menu of twenty-four items, fifteen of which are document files. To view these, you must load in a Basic viewer program which directs the text to screen or printer as required. There is a fairly lengthy and chatty editorial and a separate overview of the disk's content. A news column carries details of software releases, user groups, retailers and publications whilst other 'regulars' include software reviews (Page 6's Hypnotic Land is the subject of scrutiny), games hints (more Hypnotic Land ...) and a section for VCS users. An article on protecting software - first printed in the old Atari User - is featured along with extracts from Bill Carris's excellent book for beginners, Inside Atari Basic. For gamers there is a puzzle called Gumballs - though you may find the screen text rather hard to make out. No such problems though with Paul Lay's brilliant Boulderdash clone Munchy Madness, which appears here alongside a German 'scroller' demo and a PD version of Activision's Ballblazer. There are several other fillers but the highlight of the disk is most certainly Desktop 1.5, a shareware replacement operating system for the 8-bit. This provides pull down menus, windows, built-in disk functions and many other innovations. It can be used to launch standard Basic and binary files without fuss, and so compares favourably with recent commercial offerings.

On Futura 6 the boot picture is an 800XL and this time there are twelve slots on the opening menu. Apart from the usual news and editorial items, the files on side A consist of Colour Helper - a visual guide to POKE and SETCOLOR values, a game called Spider from a German Atari user club and an enjoyable two-player game called Capture The Flag (though not the superb 3-D version from Sirius!). The flip side is devoted to Turbo Basic and presents five programs - Horse Racing, Random Music Maker, Word Counter, Loan and HexaDeci - along with relevant documentation files.

Futura 7 is, once again, brimming with goodies. Among the document files you'll find reviews of Dark Chambers and Operation Blood, the latest news in the 8-bit world (the Brundles ... coming soon?), an introduction to Oasis Design, some DIY car repair hints using only Atari hardware(!) and the background story of a rather rare comic called Atari Force. On side A there's also a version of the Yahtzee dice game called Five Up and a 'fun' program which might just catch you out. Insert the disk the other way up and you'll discover a neat educational game from a Futura subscriber, an excellent PD example of draughts (or Checkers as Americans like to call it), a kaleidoscope program that lets you alter various parameters to experiment with patterns, a rather clever ten-pin bowling simulator and a frenetic clone of the alien blast-up Robotron. Finally, there's a utility called VTEX that displays document files with the benefit of many advanced features. As you can see, the content of Futura is sufficiently varied with each release to ensure that there's something to interest everybody. Contributions from readers are encouraged and free PD software is offered to the authors of those items published.

Paul Rixon checks to see who - apart from Page 6 - is still out there

NA CALL..

OU NEED SOME SUPPORT?

HERE IS THE NEWS-DISK

Meanwhile, Doncaster's Dean Garraghty has, like Stuart, completed his University degree and has decided to take the brave plunge into full-time support of the Atari 8-bit. Dean Garraghty Software, or DGS, is a new venture but its activities are an extension of services that Dean has been providing for several years. DGS offers a PD disk library, sales of commercial software including Dean's own Digi-Studio package and a range of imported Power-Per-Post items (see reviews in last issue's NAU), sales of second-hand hardware and software and a regular disk-based publication called the News-Disk. The News-Disk was born in 1991 and intended as a medium for distributing detailed reviews and listings of the PD library. With access to worldwide computer networks at University, Dean was able to expand the disk and include articles from countries such as the United States. It is now received by many readers, both by subscription and by the wonders of world-wide electronic communication. A program or two is often thrown in for good measure, but as its name suggests the News-Disk is more concerned with the communication of knowledge than the distribution of software. To illustrate the typical composition of a News-Disk, we'll briefly examine the subject matter of the last few issues.

The 11th News-Disk contains many textual files covering topics such as the Alternative Micro Show, what to do with an 810 ("fitted with a small pair of wheels your 810 would make a rather nifty skateboard" ...) and revelations of how the News-Disk is created. There is a well-researched article concerning versions of DOS available for 8-bit machines, a hardware modification for 256K users who don't want to hang around waiting for their memory to clear and a humorous article, reprinted (with distasteful sections removed) from 'The Grim Reaper', about European bureaucrats standardising the Atari menu format.

Digitised strains of 'happy birthday to you' feature in the introduction to issue 12 of the News-Disk, signifying two years of continuing publication. DGS recently imported the PPP games Glaggs It and Mine Sweeper, and reviews of both appear here along with detailed information of the Quick Programming Language and SAM Desktop system. Other articles address the use of the joystick ports and the creation of string-based fonts, whilst there is a chance to win copies of Digi-Studio and other software prizes (alas, the deadline for entries has already expired!). Program files accompany the fonts article and also include a simulation of running a motorbike manufacturer. The DGS PD catalogue is listed on side B, comprising a total of 165 disks. Several of these are demo versions of commercial products, so are well worth investigation if you prefer to sample products before committing hard-earned cash.

As well as a lengthy editorial, issue 13 of the News-Disk contains reviews of PPP's game Rubber Ball (which coincidentally is also marketed by DGS!) and the Yorky 256K upgrade, a classic product that can still be obtained. Elsewhere there's an informative article on the internet and what those strange e-mail addresses are all about, the start of a general series about Atari 8-bit gaming and a regular section of advertisements. Program files comprise a utility for RAMBIT users that copies Turbo Basic files from fast tape to disk or vice versa, a text-based simulation of the civil war - not one of the highlights! - and a scroller demo (shame about the language). Side B of the disk is, as usual, reserved for details of the additional services provided by DGS. There are clearance bargains of new and used hardware, software and books plus cheap blank disks. Assistance is offered in transferring files between PCs and Ataris and in digitising audio taped sounds using the Replay sampling system. Readers' submissions are, of course, encouraged and products which could be commercially developed are also sought.

DON'T DELAY, BUY 'EM TODAY!

The conclusion has to be that if you are serious about your Atari and want to be up-to-date with the latest news, opinions and reviews, you should waste no time in getting your hands on copies of Futura and the News-Disk. If you want a regular supply of high quality PD software then Futura is hard to beat. By subscribing to both you will help to secure the future of your computer and, at the same time, enjoy the delights of two commendable publications from genuine enthusiasts. Stuart Murray and Dean Garraghty deserve every success for their valuable contributions to Atari history.

USEFUL INFO

Futura is produced by Stuart Murray, NOSAUG, 71 Walker Road, Torry, Aberdeen, AB1 3DL, Scotland. Disks cost £1.95 each or £11 for a 6 issue subscription, cassettes are £3.95 each or £11 for 3 issues.

Dean Garraghty Software can be reached at 62 Thomson Avenue, Balby, Doncaster, DN4 0NU or by telephone on (0302) 855026. A subscription to the News-Disk costs £5 for 4 issues. Please note that the road number for DGS given in last issues' PPP reviews was incorrect.

TOOLKIT

Steve Lakey's excellent utility adds several extremely useful facilities to Basic including an automatic TYPO checker

If you have written programs in ATARI BASIC, I am sure you must have noticed the lack of line editing commands, such as line deletion and line renumber. Although there have been programs to carry out these tasks using a USR call, it's not quite the same as having the actual BASIC commands. With these commands in mind I set about writing a program that would not only add these commands to the ATARI BASIC repertoire, but also provide twelve extra commands, some more useful than others.

As the listing contains a lot of machine code, it is important to save a copy before running and if possible, to check the program with the TYPO III utility.

When you run the program listing you will be able to modify editor display colours and margin limits, before finally creating the autoboot toolkit file.

DISK USERS

All disks should be formatted with ATARI DOS 2/2. 5. This is because the boot disk ultimately created, will make use of the area of memory known as shadow ram, locations 40960 - 65535. DOS's such as DOS XE/SPARTADOS use this area of memory for their own purposes and therefore cannot be used with the toolkit program. It is important that the disks you use for the listing and the boot file are formatted using the same density option.

MAKING THE BOOT FILE

Once run, you will be asked to select either tape or disk then you will be prompted to modify the default display colours using the START/SELECT/OPTION keys. How about a nice purple border with green background, lovely!

Next it's the left/right margin values. Although you may use any values within the allowed range, I recommend keeping the right margin at 39 and the left margin at either 0 or 2(default).

Next, you should follow the on-screen instructions for creating the autoboot file, remember to use a newly formatted disk or a cassette at least five minutes long.

LOADING THE TOOLKIT

Cassette users should switch on with the START key held down, whilst disk users should place the boot disk in the drive and then switch on the the computer.

Once the disk version has loaded you will be asked to place a DOS 2. 5 disk, containing DOS files, in the drive. Pressing ESC at this point will skip DOS loading, equivalent to turning the computer on with the drive turned off. I included this feature at the testing stage, so I would not have to swap disks before testing the commands. I have left this feature in the program, as it provides quick access to the commands, negating the need to find a DOS 2. 5 disk.

For those interested, the toolkit requires only 185 bytes of user ram.

USING THE TOOLKIT

Any of the following commands that take parameters should have a single space character inserted between the main command and the first parameter. Any error in syntax will be reported with an error message, whilst illegal parameters will be signalled by an audible tone.

COMMAND PARAMETERS

1. TYPO *NONE*

Invoke the TYPO III error checker. To use, list the line/lines that you wish to check, position cursor on a line and press [RETURN]. A two character code will appear on the top line which should be compared with the code printed in the magazine. Any differences in the code represent an error in that particular line. This command also disables all other commands. Press RESET to reinstall the commands.

2. CODE *P1 (Range:0 - 255)*

Displays the error message equivalent to the code in P1. Any code without an accompanying message will display a ">See Manual. " message.

e.g. CODE 17

3. LINES *NONE*
Toggles a blank scanline under each text line, improving the readability of the display. Pressing RESET will give you a normal display.

4. NOISE OFF *NONE*
Disables the keyboard click.

5. NOISE ON *NONE*
Enables the keyboard click.

6. MEMLO *P1 (Range:initial setting - 65535)*
Alters the MEMLO pointer. Raising MEMLO above it's initial value, found by typing INFO, will reserve memory which cannot be corrupted by BASIC. MEMLO should always be higher than it's initial value. Lowering it below this value could cause the computer to lock-up. Raising MEMLO decreases the amount of memory available for your program. Changing MEMLO erases the program currently in memory.

7. INFO *NONE*
Display program size, free memory and the MEMLO setting. Program size will never be zero as it takes into account the buffer where commands are entered.

8. TRASH *NONE*
Erases the 185 byte driver from memory, permanently disabling the extra commands. It will not effect any BASIC program currently in memory.

9. DIR *P1*
Produces a disk directory without the need to enter DOS. The parameter should be a drive identifier, followed by the file specifier.

e.g. DIR D1:. * or DIR D1:*. BAS*

10. BIN *P1*
Converts from binary to decimal or decimal to binary. Decimal numbers should be in the range 0 - 65535 and binary numbers should be limited to 16 bits. Binary numbers should be preceded with a % sign.

e.g. BIN %1111 — or BIN 129
15 — %10000001

11. HEX *P1*
Similar to BIN, except hexadecimal numbers should be preceded with a $ sign and limited to 4 digits.

e.g. HEX $FF — or HEX 32768
255 — $8000

12. DEL *P1, P2*
Deletes lines P1 through to P2. Both should be below 32768 and P2 should be greater than P1. If these conditions are not met or if P1 does not exist then you will hear an audible tone.

e.g. DEL 10, 100

13. REN *P1, P2*
This will renumber lines starting at P1 and incrementing by P2. P1 should be lower than 32768 and P2 should be greater than zero. It will not allow renumbering if the new line numbers rise above 32767. It will not renumber line references such as:-10 LINE=100:GOTO LINE

Line numbers surrounded by brackets will not be updated. The screen will blank while renumber is processing the lines, causing screen flashes when renumbering small programs.

14. CHANGE *P1 P2*
Replace variable name P1 with variable name P2. If P2 already exists or P1 does not exist you will hear an audible tone. A $ sign should be added to P1 if it is a string. Some brackets should be added to P1 if it is an array.

e.g. CHANGE N$ NAME - String variable N$ to NAME$
CHANGE T() TABLE - Array name T() to TABLE()
CHANGE NUM NUMBER - Numeric variable NUM to NUMBER

Program overleaf ☞

PROBLEMS

If a program uses any shadow ram(40960 - 65535) then TRASH should be executed before running the program. This will ensure lock-ups do not occur as a result of TOOLKIT code being corrupted. As a general rule, if a program contains machine code calls, save the program and execute the TRASH command.

If a program containing machine code does not appear to do exactly what it should then use the TRASH command. Although this should not usually be necessary, I have found the INVADERS game in issue 60 of NEW ATARI USER will not execute sound effects properly unless you TRASH the commands.

TOOLKIT

```
LU 100 REM ******************************
NS 110 REM *    ATARI BASIC TOOLKIT     *
CA 115 REM *    (BOOT FILE CREATOR)     *
KP 120 REM *            By              *
AY 130 REM *       Stephen Lakey        *
IT 140 REM * -------------------------- *
WZ 150 REM * NEW ATARI USER - OCT 1993 *
IX 160 REM * -------------------------- *
MI 170 REM ******************************
DJ 175 RESTORE 200:SETCOLOR 2,0,0:? CHR$(125):POKE 752,1:POKE 82,0
ZO 180 POSITION 0,0:? "       BASIC TOOLKIT BOOT FILE CREATOR       "
NT 185 FOR BYTE=0 TO 80:READ DAT:POKE 1536+BYTE,DAT:NEXT BYTE
FZ 190 FOR BYTE=0 TO 39:READ DAT:POKE 1700+BYTE,DAT:NEXT BYTE
CB 195 DIM IO$(8):IO$="█✤ V▣h◆":REM CIO Routine
NV 199 REM HEXADECIMAL TO MEMORY ROUTINE
JX 200 DATA 104,104,133,204,104,133,203,104,104,133,205,104,133,207,104,133,206,160,0,132,232,132,209,177,206
FQ 205 DATA 56,233,48,201,16,144,2,233,7,24,10,10,10,10,133,208,200,177,206,56,233,48,201,16,144,2,233
TK 210 DATA 7,24,101,208,133,208,152,72,164,209,165,208,145,203,24,101,232,133,232,230,209,104
OP 215 DATA 168,200,196,205,208,199,96
NS 220 REM DISK I/O ROUTINE
FN 230 DATA 104,104,104,133,203,32,83,228,16,3,132,203,96,24,173,4,3,105,128,141
PD 235 DATA 4,3,144,3,238,5,3,238,10,3,208,3,238,11,3,198,203,208,222,96
EC 299 REM READ IN PROGRAM CODE
IU 300 RESTORE 1000:DIM CODE$(80):BUF=32768:LINE=1000:GO=0
AP 305 READ START:IF START=-1 THEN 500
JJ 310 READ FINISH:LINE=LINE+2
ZV 320 IF GO=0 THEN GO=1:GOTO 340
QQ 325 IF START=40960 THEN OLD=BUF:IF INT(BUF/128)*128<>BUF THEN BUF=INT((BUF/128)+1)*128:GOTO 340:REM 128 byte boundary
KD 330 BUF=OLD+(START-OLDFIN):REM Set new buffer area
GG 340 OLDFIN=FINISH:OLD=BUF+(FINISH-START):REM Store Current finishing point
IH 350 POSITION 0,2:? "Reading Line:";LINE
VX 355 READ CODE$:X=USR(1536,BUF,LEN(CODE$),ADR(CODE$)):REM Store data
MJ 360 READ CHECK:IF CHECK<>PEEK(232) THEN ? :? "ERROR:Check Line ";LINE:END
IP 365 LINE=LINE+2
IJ 370 BUF=BUF+(LEN(CODE$)/2):FINISH=FINISH-(LEN(CODE$)/2):IF FINISH>START THEN 350
PA 380 GOTO 305
OX 499 REM SET TAPE/DISK AND SET OPTIONS
YO 500 ? :? "Press 1:Tape  2:Disk"
PT 505 OPEN #1,4,0,"K:"
CV 510 GET #1,TYPE:IF TYPE<>ASC("1") AND TYPE<>ASC("2") THEN 510
SJ 515 CLOSE #1:TYPE=TYPE-48
IT 520 ? :? "SET COLOURS THEN PRESS [RETURN]"
QG 525 ? "<START>  - Change Text Brightness"
IX 530 ? "<SELECT> - Change Border Colour"
TH 535 ? "<OPTION> - Change Background Colour":?
GL 550 IF PEEK(53279)=6 THEN REG=709:GOTO 565:REM Start key
CX 555 IF PEEK(53279)=3 THEN REG=710:GOTO 565:REM Option Key
KD 560 IF PEEK(53279)=5 THEN REG=712:GOTO 565:REM Select Key
SX 562 GOTO 575
JV 565 C=PEEK(REG):C=C+1:IF C=256 THEN C=0
JH 570 POKE REG,C:REM Adjust Colour
QF 575 IF PEEK(764)<>12 THEN 550:REM Check for [RETURN]
YB 578 POKE 752,0:REM Cursor on
HV 579 REM To get the left arrow press ESC,then press CONTROL AND + keys
VI 580 TRAP 580:POSITION 0,11:? "Please Enter Left Margin(0-19)     ←←←←";:INPUT LEFT:IF LEFT<0 OR LEFT>19 THEN 580
KE 585 TRAP 585:POSITION 0,13:? "Please Enter Right Margin(20-39)     ←←←←";:INPUT RIGHT:IF RIGHT<20 OR RIGHT>39 THEN 585
VX 590 TRAP 0:REM Error trapping off
TZ 599 REM STORE SETTINGS & CREATE FILE
UK 600 START=32768
HY 602 POKE START+206,PEEK(709):REM Text
PZ 604 POKE START+211,PEEK(710):REM Screen
UG 606 POKE START+216,PEEK(712):REM Border
FT 610 POKE START+221,LEFT:POKE START+225,RIGHT:REM Margins
TZ 612 BUFHI=INT(START/256):BUFLO=START-BUFHI*256:REM Buffer
KX 614 SECTS=INT((BUF-START+127)/128):REM Number of sectors
ZQ 618 REM CHECK FOR TAPE OR DISK VERSION
PK 620 IF TYPE=2 THEN 660:REM Disk Version
II 630 RESTORE 980:BYTE=16:? :? "Please Wait...":?
EG 632 READ DAT:IF DAT<>-1 THEN POKE START+BYTE,DAT:BYTE=BYTE+1:GOTO 632:REM Tape version code
LC 634 POKE START+(3*256)+1611,3:POKE START+(3*256)+1614,2
DK 635 ? "Prepare Tape For RECORDING,Then Press   [RETURN]."
OB 640 GOTO 700
HK 659 REM PREPARE DISK
DC 660 ? :? "Place A Blank Formatted Disk In Drive,  Then [RETURN]."
RI 680 ON PEEK(753)=0 GOTO 680:IF PEEK(764)<>12 THEN 680:REM Wait for [RETURN]
ST 690 GOTO 750:REM Do disk
XH 699 REM WRITE TAPE BLOCKS
TX 700 OPEN #1,8,128,"C:"
VQ 702 IOCB=848
DJ 704 POKE IOCB+2,11:REM Write Command
ME 706 POKE IOCB+4,BUFLO
EF 710 POKE IOCB+5,BUFHI
PS 712 IF INT(SECTS/2)*2<>SECTS THEN SECTS=SECTS+1:REM SECTS/2 Is Integer
EK 715 POKE IOCB+8,0
LR 720 POKE IOCB+9,3:REM Length In Pages(3*256=768 bytes)
XY 725 X=USR(ADR(IO$)):REM CIO Routine
LZ 726 CLOSE #1
FF 728 BUFHI=BUFHI+3:SECTS=SECTS-3
BI 730 POKE 764,12:OPEN #1,8,128,"C:"
RM 734 POKE IOCB+2,11:POKE IOCB+4,BUFLO:POKE IOCB+5,BUFHI
ZP 736 POKE IOCB+8,0:POKE IOCB+9,SECTS/2
YJ 738 X=USR(ADR(IO$)):REM CIO Routine
MK 739 CLOSE #1
AG 740 ? :? "All Finished!"
OT 745 END
QU 749 REM WRITE DISK SECTORS
PZ 750 DUNIT=769:DCOMND=DUNIT+1:DBUFLO=DCOMND+2:DBUFHI=DBUFLO+1:DAUX1=DBUFLO+6:DAUX2=DAUX1+1
TP 760 POKE DUNIT,1:REM Drive unit
YU 765 POKE DCOMND,ASC("W"):REM Write
SM 780 POKE DAUX1,1:POKE DAUX2,0:REM Start at sector 1
WG 790 POKE DBUFLO,BUFLO:POKE DBUFHI,BUFHI:REM Buffer address
OG 800 X=USR(1700,SECTS):REM Write sectors to disk
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TK 810 IF PEEK(203)<>0 THEN ? :? "ERROR:"
   ;PEEK(203);" During Disk Write.":GOTO
   840
AF 830 ? :? "All Finished!"
OF 840 END
IW 979 REM CODE FOR TAPE VERSION
BO 980 DATA 169,1,141,240,2,160,0,132,82,
   185,154,41,132,208,32,176,242,164,208,
   208
LR 982 DATA 192,140,208,241,169,0,133,203
   ,169,160,133,204,169,3,141,82,3,169,86
   ,141
KG 984 DATA 84,3,169,40,141,85,3,169,4,14
   1,90,3,169,128,141,91,3,169,12,141
WS 986 DATA 252,2,162,16,32,86,228,76,89,
   40,67,58,155,32,122,253,48,13,160,0
JH 988 DATA 145,203,230,203,208,2,230,204
   ,24,144,238,169,253,141,1,211,169,60,1
   41,2
DH 990 DATA 211,169,125,32,176,242,169,0,
   141,240,2,169,155,32,176,242,76,142,40
   ,-1
HM 999 REM THE TOOLKIT DATA
SQ 1000 DATA 10240,10596
WA 1002 DATA 00060028BC28A9FF8D01D3A9008D
   C602A92985D0A9018D0103A9528D0203A9008D
   0403A9A08D0503,35
EN 1004 DATA A9078D0A03A9008D0B032053E410
   010018AD0403690808D0403AD0503690008D0503
   EE0A03D003EE0B,185
IQ 1006 DATA 03C6D0D0DDA9FD8D01D3A0008452
   B99A29F00A84D020B0F2A4D0C8D0F1ADF102D0
   FBADF102F0FBA9,235
OF 1008 DATA 028552ADFC0248A9FF8DFC02A97D
   20B0F268C91CD00BA9C88850CA9C5850D4C9C28
   20A7C518ADE702,91
MN 1010 DATA 8DE52869B98DC028ADE8028DEB28
   69008DC728207529A90085091860208C28A900
   8DE702850EA900,25
VB 1012 DATA 8DE802850FA90C8DC502A9748DC6
   02A9008DC802A9028552A9278553A90085CD85
   CFA90085CE85D0,80
MP 1014 DATA 18A5CD698E85CD9002E6CE18,49
OB 1016 DATA A5CF69A985CF9002E6D0A200BD1A
   03E8C945D0F8BD1A0385CBBD1B0385CCA00FB1
   CB91CF8810F9A5,115
YG 1018 DATA CF9D1A03A5D09D1B0318A004B1CF
   C86901 91CDB1CFC8690091CDA5CDA00491CFA5
   CEC891CF18608E,171
BG 1020 DATA 8F02204E298D8E02A9FF8D01D320
   00A0A9FD8D01D3AD8E0260,178
OW 1022 DATA 10613,10903
VM 1024 DATA A50C8DBD28A50D8DBE28ADE70285
   0C85CBADE802850D85CCA000B9BC2891CBC8C0
   B9D0F6609B1C20,16
HL 1026 DATA 2020202020202020202020204E4557
   2041544152492055534552 9B9B202020202020
   20202020202020,16
WL 1028 DATA 2020505245534 54E54539B9B2020
   20202020202020C1D4C1D2C9A0C2C1D3C9C3
   A0D4CFCFCCCBC9,15
KZ 1030 DATA D49B9B20202020202020202020202020
   20202057726974 74656E2042799B9B20202020
   20202020202020,40
LG 1032 DATA 5374657068656E20522E204C616B
   65799B9B506C6163652061 20666F726D617474
   65642041544152,87
AQ 1034 DATA 4920444F5320322E3520646973 6B
   2C202020636F6E7461696E696E6720444F5320
   66696C65732C69,83
PK 1036 DATA 6E2064726976652E9B9B5072,206
EE 1038 DATA 65737320616E79206B6579206F72
   205B4553435D20746F20736B697020444F5320
   626F6F742E00,178
TX 1040 DATA 40960,41091
KG 1042 DATA AD8F02F00160A522C905F00160AD
   8E02C99BF001608A489848A000A99B91242006
   A6A200BD8005C9,43
AT 1044 DATA 20D003E8D0F6A96A85D4A9A685D5
   A000B1D485D6D0034CFEA5C8B1D485D786D8C8
   B1D4DD8005D022,160
XR 1046 DATA E8C6D6D0F3A5D7D00ABD8005C99B
   F0034CFEA5C8B1D448C8B1D485D56885D46CD4
   00A6D818A5D469,218
UV 1048 DATA 0E85D4A5D5690085D54C36A0,198
XX 1050 DATA 41093,41727
KX 1052 DATA 20B5A4A99B8D84A02014A320D2D9
   900548484C2AA3A5D48DE702850EA004910CA5
   D58DE802850FA0,54
LR 1054 DATA 0B910CA94E8D8005A9458D8105A9
   578D8205A99B8D83054CE4A520B5A4A99B8D84
   A02014A320D2D9,4
KF 1056 DATA 900548484C2AA3A95A85E0A9A885
   E1A5D5D0EFA92020B0F2A93E20B0F2A92020B0
   F2A000B1E0C9FF,78
DD 1058 DATA F038C5D4F017C8B1E0C99BD0F9C8
   189865E085E0A5E1690085E14CF7A0C884D4B1
   E0C99BF00720B0,132
XP 1060 DATA F2A4D410F0A92E20B0F2A99B20B0
   F24CD0A5A94485E0A9A185E1A0FF4C1AA15365
   65204D616E7561,161
KC 1062 DATA 6C9B20B5A4A000B1D4C925F04EA9
   9B8D84A02014A320D2D9900548484C2AA3A93D
   20B0F2A92520B0,236
GL 1064 DATA F2A9028D00A3A9088D01A318,199
FS 1066 DATA A5556907855 5A5D5F00A0E01A318
   A5556900855 5A91285E0A9A385E12045A2A99B
   20B0F24CD0A5C8,47
RL 1068 DATA A9028D00A3A9108D01A3A91285E0
   A9A385E120B1A2A93D20B0F2A5D685D4A5D785
   D52061A44CD0A5,66
HK 1070 DATA 20B5A4A000B1D4C924F040A99B8D
   84A02014A320D2D9900548484C2AA3A93D20B0
   F2A92420B0F218,223
VY 1072 DATA A5556903855 5A9048D01A3A9108D
   00A3A90285E0A9A385E12045A2A99B20B0F24C
   D0A5C8A9108D0A,165
IQ 1074 DATA A3A9048D01A3A90285E0A9A385E1
   20B1A2A93D20B0F2A5D685D4A5D785D52061A4
   4CD0A5A5D5D019,81
NA 1076 DATA A5D4CD00A3B012A8B1E020B0F2C6
   55C655A000CE01A3D0F060AD00A385E3A5D485
   D6A5D585D746D7,141
YR 1078 DATA 66D646E3A5E3C901D0F4A5D6,246
KI 1080 DATA 85D8A5D785D9AD00A385E306D826
   D946E3A5E3C901D0F438A5D4E5D8A8B1E020B0
   F2C655C655A5D6,37
SW 1082 DATA 85D4A5D785D5CE01A34C45A2A900
   85D685D7B1D484E3A000D1E0F00BC8CC00A3D0
   F668684CD3A418,20
JZ 1084 DATA 9865D685D6A5D7690085D7A4E3C8
   B1D4C99BD00160CE01A3D00568684CD3A4AD00
   A385E306D626D7,67
OY 1086 DATA 46E3A5E3C901D0F44CB7A2,228
BF 1088 DATA 41730,42388
IP 1090 DATA 30313233343536373839414243 44
   45463031A5D485F3A5D585F4B1D4CD84A0F016
   38E930C90A900C,35
BV 1092 DATA A91185C32090A468684CD0A5C8D0
   E3A90085F24C00D8A000B995A3F00A84D420B0
   F2A4D4C8D0F1C6,18
TB 1094 DATA 54C654C65438A58EE58285D4A58F
   E58385D5A91885552061A438ADE502E50E85D4
   ADE602E50F85D5,100
WI 1096 DATA A91885552061A4ADE70285D4ADE8
   0285D5A91885552061A44CD0A59B50726F6772
   616D2053697A65,79
NC 1098 DATA 2862797465732920 2D209B467265
   65204D656D6F72792862797465732920202D20
   9B4D454D4C4F20,213
SJ 1100 DATA 53657474696E6720202020202020
   2D209B0020B5A4A210A90C9D42032056E4A903
   9D4203A9069D4A,230
BH 1102 DATA 03A9009D4B03A5D49D4403A5,153
SC 1104 DATA D59D45032056E4101284C3A210A9
   0C9D42032056E42090A44CD0A5A210A9059D42
   03A9FD9D4403A9,170
NO 1106 DATA 039D4503A9809D4803A9009D4903
   2056E41000A99B20B0F24CD0A5A99B20B0F2A0
   00B9FD03C99BF0;119
NL 1108 DATA CA84D420B0F2A4D4C8D0EFA90085
   D5A5C385D420AAD9A90085F2A98085F3A90585
   F420E6D8A000B1,97
HM 1110 DATA F3300A84D620B0F2A4D6C8D0F229
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continued

TOOLKIT

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BT 1206 DATA E3A208A5CF85CCA5D006CC2AC91A
   9004E91AE6CCCAD0F285CDA9809158C8C028D0
   F9A5CC69A0A003,117
PI 1208 DATA 9158A5CD1869A1C891582045,147
QA 1210 DATA 0668A84C9906413D555352283135
   3336299B9B5479706F2049494920697320757 0
   20616E64207275,209
NQ 1212 DATA 6E6E696E67219B00024 96E737566
   66696369656E74204D656D6F72799B0356616C
   7565204572726F,171
BE 1214 DATA 729B04546F6F204D616E79205661
   726961626C65739B055374726 96E67204C656E
   67746820457272,147
OW 1216 DATA 6F729B064F7574204F6620446174
   619B074C696E65204E756D62657220477265 61
   74657220546861,3
OC 1218 DATA 6E2033323736379B08496E707574
   2053746174656D656E74204572726F729B0941
   72726179206F72,237
XK 1220 DATA 20537472696E672044494D204572
   726F729B0B466C6F6174696E6720506F696E74
   204F766572666C,77
JV 1222 DATA 6F772F556E646572666C6F77,203
JI 1224 DATA 9B0C4C696E65204E6F7420466F75
   6E649B0D4E6F204D61746368696E6720464F52
   2053746174656D,225
QV 1226 DATA 656E749B0E4C696E65204C656E67
   7468204572726F729B0F474F535542206F7220
   464F52204C696E,153
TO 1228 DATA 652044656C657465649B10524554
   55524E204572726F729B1153796E7461782045
   72726F729B1249,68
PX 1230 DATA 6E76616C6964205374726 96E6720
   436861726163746572 9B134C4F41442050726F
   6772616D20546F,107
KK 1232 DATA 6F204C6F6E679B14446576696365
   204E756D626572204572726F729B154C4F4144
   2046696C652045,166
VD 1234 DATA 72726F729B80425245414B204B65
   792041626F72749B81494F434220416C726561
   6479204F70656E,115
SE 1236 DATA 9B824E6F6E2D657869737465,7
PV 1238 DATA 6E74204465766963659B83494F43
   422057726974652D4F6E6C79204572726F729B
   84496E76616C69,51
TW 1240 DATA 6420436F6D6D616E649B85446576
   696365206F722046696C65204E6F74204F7065
   6E9B8642616420,159
TP 1242 DATA 494F4342204E756D6265729B8749
   4F43422052656164 2D4F6E6C79204572726F72
   9B88456E64204F,35
OY 1244 DATA 662046696C659B895472756E6361
   74656420526563 6F72649B8A4465766963652 0
   54696D652D4F75,104
EC 1246 DATA 749B8B446576696365204E414B9B
   8C53657269616C20427573 20496E7075742046
   72616D696E6720,233
KW 1248 DATA 4572726F729B8D437572736F7220
   4F7574204F662052616E67659B8E5365726961
   6C204275732044,33
TB 1250 DATA 617461204672616D65204F76,38
SL 1252 DATA 657272756E9B8F5365726961 6C20
   42757320446174612046726 16D652043686563
   6B73756D204572,207
YH 1254 DATA 726F729B9044657669636520446F
   6E65204572726F729B91526561642041667465
   72205772697465,131
CC 1256 DATA 20436F6D70617265204572726F72
   9B9246756E6374696F6E204E6F7420496D706C
   656D656E746564,105
AH 1258 DATA 204572726F729B93496E73756666
   696369656E742052414D9BA04472697665204E
   756D6265722045,98
LZ 1260 DATA 72726F729BA1546F6F204D616E79
   204F50454E2046696C65739BA24469736B2046
   756C6C9BA3556E,201
YA 1262 DATA 7265636F76657261626C65205379
   7374656D20492F4F204572726F729BA446696C
   65204E756D6265,22
LW 1264 DATA 72204D69736D617463689BA5,8
OT 1266 DATA 46696C65204E616D65204572726F
   729BA6504F494E54204461746120 4C656E6774
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   7F20B0F2A99B20B0F2A4C360A200BDA4A4F00A
   86D420B0F2A6D4,187
RF 1112 DATA E8D0F14C59A49B4572726F72204E
   756D62657220 3A200018A98085D4A90585D58A
   65D485D4A5D569,59
EU 1114 DATA 0085D5A000B1D4C920F00C6868A0
   1184C32090A44CD0A5E6D4D002E6D560A9008D
   DB02A90385414C,185
OJ 1116 DATA D0A5A9018DDB02A90085414C,68
ZH 1118 DATA D0A5A9028D1C02AD1C02D0FB60A9
   008D2F0220FCA4AD300285D4AD310285D5A005
   B1D44888B1D448,33
QK 1120 DATA A006B1D48D95A5D01018A5D46920
   85D4A5D5690085D54C48A538A5D4E92085D4A5
   D5E90085D5A000,43
UB 1122 DATA A97091D4C891D4C891D4C8A94291
   D4C86891D4C86891D4C8A217AD95A5F005A900
   91D4C8A90291D4,93
MO 1124 DATA C8CAD0EEA94191D4C8A5D491D48D
   3002C8A5D591D48D310220FCA4A9228D2F024C
   D0A5,117
UU 1126 DATA 42390,42523
NG 1128 DATA A200BD30A79D0006E8D0F7A20BBD
   30A89D8005CA10F7A97585 28A90085 29A98B85
   24A9058525A000,180
DD 1130 DATA B93CA8F00A84D420B0F2A4D4C8D0
   F14CFEA5A9458D8005A94E8D8105A9448D8205
   A99B8D8305A97D,43
OP 1132 DATA 8528A9008529A98385 24A9058525
   A004A900998005C810F82011A668A868AA60A2
   0FB5F09D1CA6CA,68
IS 1134 DATA 10F860A20FBD1CA695F0CA10F860
   ,79
XG 1136 DATA 42540,42609
BT 1138 DATA A001B10C48C8B10C48A50C8DE702
   850E8D50AEA50D8DE802850F8D51AE68850D68
   850CA9B98D52AE,227
IG 1140 DATA 8D54AECE52AEA9FF8D53AEA9008D
   57AE201FAF6CFCFF04005459504F96A5,174
ZA 1142 DATA 42616,42627
EM 1144 DATA 08004E4F495345204F4EE4A4,203
UT 1146 DATA 42630,42642
SL 1148 DATA 09004E4F495345204F4646F0A4,2
   2
WT 1150 DATA 42644,42651
XX 1152 DATA 0401434F4445C7A0,135
FA 1154 DATA 42658,42666
OC 1156 DATA 05004C494E455307A5,44
FQ 1158 DATA 42672,42678
TV 1160 DATA 0301444952DCA3,98
EJ 1162 DATA 42686,42692
AK 1164 DATA 0301484558D1A1,91
UT 1166 DATA 42700,42706
LG 1168 DATA 030142494E4FA1,205
UH 1170 DATA 42714,42721
XI 1172 DATA 0400494E464F40A3,19
CO 1174 DATA 42728,42736
AX 1176 DATA 05014D454D4C4F85A0,165
XM 1178 DATA 42742,42750
NS 1180 DATA 050054524153482CA6,89
EI 1182 DATA 42756,42765
AP 1184 DATA 06024348414E4745BDAC,23
ED 1186 DATA 42770,42776
DI 1188 DATA 03FF44454CD2AF,88
CW 1190 DATA 42784,42790
QN 1192 DATA 03FF52454E68B1,0
EA 1194 DATA 42798,44623
HS 1196 DATA 000068A000B91A03C945F008C8C8
   C8C024D0F260C8A94F991A03C8A906991A03A2
   00BD00E49D4F06,26
TN 1198 DATA E8E00FD0F5A95D8D5306A9068D54
   06AD04E469008D5F06AD05E469008D6006A900
   A20395CBCA10FB,131
VB 1200 DATA 6000000000000000000000000000
   0000205E060848C99BF037E6CB85D18A48A900
   85D0A2080A26D0,64
VO 1202 DATA 06D190071865CB9002E6D0CAD0EF
   85CF18A5CC65CF85CCA5CD65D085CDA5CE6900
   85CE68AA682860,19
EK 1204 DATA 8A489848A20086CF86D0A01806CC
   26CD26CE26CF26D038A5CFE9A4AAA5D0E90290
   0486CF85D088D0,52
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   68204572726F72,92
MI 1268 DATA 9BA746696C65204C6F636B65649B
   A8496E76616C696420436F6D6D616E649BA944
   69726563746F72,157
QX 1270 DATA 792046756C6C9BAA46696C65204E
   6F7420466F756E649BAB496E76616C69642050
   4F494E549BAC49,165
XG 1272 DATA 6C6C6567616C20417070656E649B
   AD4261642053656563746F727320417420466F72
   6D61742054696D,227
PU 1274 DATA 659BFF,255
WL 1276 DATA 20B5A4B1D4C920D0034C54ADC99B
   D0034C54ADA000B1D4C920F00DC99BD0034C54
   AD99FD03C8D0ED,56
PZ 1278 DATA 88B9FD03C929D01B88B9FD03C928
   F0034C54AD098099FD03C8C8C8A9008D56AE4C
   40ADC924D00FA9,242
KP 1280 DATA A499FD03C8C8A9018D56AE4C40AD
   C930B0034C54ADC95B90034C54ADC941B007C9
   3A90034C54AD09,235
DO 1282 DATA 8099FD03C8C8A9028D56AEA58248
   A583489848205AAED00F68688583688582A9FD
   20B0F24CD0A5A5,192
EH 1284 DATA 828D50AEA5838D51AE8C52AEA200
   68A8688583688582B1D4C920F004C99BD008A9
   FD20B0F24CD0A5,165
IA 1286 DATA B1D4C920F0F2C99BF01DC93AB007
   C93090E64CA2ADC95BB0DFC94190DB9DFD03C8
   E810DC4C7DADAD,9
PG 1288 DATA FD03C94190CAAD56AED007A9,149
FJ 1290 DATA A89DFD03D014C901D007A9A49DFD
   03D009CABDFD0309809DFD038E53AEA58248A5
   8348205AAE6885,189
DU 1292 DATA 83688582AD58AEF0034C54ADAD52
   AECD53AED008A9008D55AE4C20AEB01238AD53
   AEED52AE8D54AE,175
SI 1294 DATA A9018D55AE4C20AE38AD52AEED53
   AE8D54AEA9028D55AEA9028D57AEAD55AEF00D
   C901D00620A6AE,239
BM 1296 DATA 4C37AE201FAFAD50AE85E0AD51AE
   85E1A000B9FD0391E003C8D0F64CD0A5,141
ST 1298 DATA 44634,45001
XF 1300 DATA A000B182D006A9008D50AE60100B
   D9FD03D006A9018D58AE60D9FD03D003C8D0E1
   B1823003C8D0F9,200
BJ 1302 DATA 189865828582A583690085B3A582
   C584D009A583C585D0034C60AEE682D002E683
   4C5AAE38A590E9,108
MT 1304 DATA 0185D4A591E90085D518A5D46D54
   AE85E0A5D5690085E138A590ED50AE85D6A591
   ED51AE85D7A000,82
LC 1306 DATA B1D491E0C6D4A5D4C9FFD002C6D5
   C6E0A5E0C9FFD002C6E1C6D6D0E4A5D7F004C6
   D710DCA2088A18,63
KK 1308 DATA 0AA818B980006D54AE998000B981
   006900998100EC57AEF003CA10E2A590850EA5
   91850F60EE52AE,200
PZ 1310 DATA EE53AEAD52AE8DCCAFA9008DCDAF
   AD53AE8DCEAFA9008DCFAFAD54AE8DCAAFA900
   8DCBAFAD50AE8D,95
LA 1312 DATA D0AFAD51AE8DD1AF4C55AF18,160
ZG 1314 DATA ADD0AF85D485E0ADD1AF85D585E1
   18A5D46DCEAF85D4A5D56DCFAF85D518A5E06D
   CCAF85E0A5E16D,71
VN 1316 DATA CDAF85E1A000B1E091D4E6E0D002
   E6E1E6D4D002E6D5A5E0C590D0EAA5E1C591D0
   E4A2088A180AA8,64
MB 1318 DATA 38B98000EDCAAF998000B98100ED
   CBAF998100EC57AEF003CA10E1A590850EA591
   850F60,60
WK 1320 DATA 45010,45394
LZ 1322 DATA A9008D61B18D59AE4CBCB0A58885
   D4A58985D5A001B1D4CD54B1D00888B1D4CD53
   B1F02DA001AD54,15
VK 1324 DATA B1D1D4900AD01088AD53B1D1D4B0
   08A9FD20B0F24CD0A5A00218B1D465D485D4A5
   D5690085D54CE5,206
ZR 1326 DATA AFAD56B1CD54B190DED008AD55B1
   CD53B190D4A5D48DD0AFA5D58DD1AFA001B1D4
   CD56B1D00888B1,122
GF 1328 DATA D4CD55B1F028A001AD56B1D1D490
   33D00888AD55B1D1D49029A00218B1D48D59AE
   65D485D4A5D569,53
RB 1330 DATA 0085D54C3FB0A00218B1D465D485
   D4A5D5690085D5A9008D59AE38A5D4EDD0AF8D
   CAAFA5D5EDD1AF,234
DE 1332 DATA 8DCBAFADCAAF8DCCAFADCBAF8DCD
   AFA9008DCEAF8DCFAFA9058D57AE2055AF4CD0
   A520B5A4B1D4C9,15
KU 1334 DATA 20D0034CEAB0C99BD0034CEA,70
WL 1336 DATA B0988D57B1A5D48D58B1A5D58D59
   B1A92C8D84A02014A320D2D91008A9FD20B0F2
   4CD0A5A5D530F4,4
FE 1338 DATA 8D54B1A5D48D53B1AD59B185D5AD
   58B185D4AD57B1A8B1D4CD84A0F003C8D0F618
   C89865D485D4A5,191
TP 1340 DATA D5690085D5A000A99B8D84A02014
   A320D2D930B8A5D530B48D56B1A5D48D55B118
   AD61B10AAABD62,95
OB 1342 DATA B18D66B1BD63B18D67B16C66B1,7
   8
TA 1344 DATA 45410,45413
RJ 1346 DATA DDAF7EB1,187
YR 1348 DATA 45416,46072
JK 1350 DATA A9018D61B18D59AE4CBCB0206CB2
   A9FD20B0F24CD0A5A9008D0ED48D00D48D2F02
   A9FE8D01D3AD55,61
WH 1352 DATA B18DF9B3AD56B18DFAB3CDF9B3D0
   04C900F0D0A58885D4A58985D5AD53B18DFDB3
   AD54B18DFEB3A9,67
LS 1354 DATA 0085D6A9E085D7A9008DFFB3A001
   B1D4304588B1D491D6C8B1D491D6C818ADFDB3
   91D66DF9B38DFD,50
GX 1356 DATA B3C8ADFEB391D66DFAB38DFEB330
   84A0028CFFB3B1D465D485D4A5D5690085D518
   A5D6690485D6A5,128
OO 1358 DATA D7690085D7D0B54C39B4D0034C73
   B1A5888DFDB385D4A5898DFEB385D5A001B1D4
   1009207CB2206C,63
ZW 1360 DATA B24CD0A5A000AD53B191D4C8AD54
   B191D418AD53B16DF9B38D53B1AD54B16DFAB3
   8D54B1C8ADFDB3,254
NN 1362 DATA 71D48DFDB385D4ADFEB36900,162
DH 1364 DATA 8DFEB385D54C25B2A9FF8D01D3A9
   408D0ED4A9228D2F0260A000A58885D48D02B4
   A58985D58D03B4,58
IU 1366 DATA A001B1D4100160C8B1D485D6C8B1
   D485D7C8A200BD04B4302AD1D4F003E8D0F4B1
   D4C907F00CC904,131
CG 1368 DATA F008C933F004C91ED0062001B34C
   CFB2C8B1D4C90ED004C82062B3A5D7C5D6F014
   18AD02B465D785,146
JS 1370 DATA D4AD03B4690085D5A0004C99B218
   AD02B465D785D48D02B4AD03B4690085D58D03
   B44C8CB2A5D448,59
TA 1372 DATA A5D548B1D4C91ED00EC8B1D4C917
   F007C918F0034C0DB3C907D00DC8B1D4C91BD0
   F9C8C4D7F03088,194
JI 1374 DATA C8B1D4C90EF004C84C4AB3C82062
   B318A5D4690685D4A5D5690085D5A4D8B1D4C9
   12F0CBC914F007,39
TE 1376 DATA C916F003C8D0EF6885D56885,8
JM 1378 DATA D46084D8A90085CBA9E085CCA204
   B5D448CA10FAA4D8A200B1D495E0C8E8E006D0
   F6A005B9E00099,249
VB 1380 DATA D4098810F7A9FF8D01D320D2D9A9
   FE8D01D3A000B1CBC5D4D007C8B1CBC5D5F00F
   18A5CB690485CB,237
HS 1382 DATA A5CC4C14B4CCD0E2C8B1CB85D4C8
   B1CB85D520EBB3A200B5D49D0EB4E8E006D0F6
   A2006895D4E8E0,85
LZ 1384 DATA 05D0F8A4D8A200BD0EB491D4E8C8
   E006D0F560A9FF8D01D320AAD9A9FE8D01D360
   ,158
CG 1386 DATA 46084,46093
QE 1388 DATA 040A0B0C0D23331E0780,45
SG 1390 DATA 46100,46134
VJ 1392 DATA 690085CCA5CBCD37B4F0034C9AB3
   A5CCCD38B4F0034C9AB3A2006895D4E8E005D0
   F860,140
CM 1394 DATA 46137,46157
VA 1396 DATA A5D68D37B4A5D78D38B4ADFFB3D0
   034C73B14C17B2,159
GR 1398 DATA -1
```

ENCOUNTERS WITH ARTISANS

Welcome to Mission 3 into the Classic PD Zone. On this Air Atari8 flight I present another mixed back of offerings from the Pudoso. You will experience close encounters with a puzzler, builder, musician and entertainer. Let us depart on our journey ...

AUTOCROSTICS

Autocrostics by Michael Stomp and Jim Dysle is a computer version of Double-Crostics; a puzzle game created by Elizabeth Kingsley in 1934.

The object of Autocrostics is to find the letters of a long quotation or message by solving a number of word puzzles given as crossword-type clues. Each corresponding letter from a solved clue is placed somewhere in the quotation. After solving as many clues as possible, parts of the quotation will become legible. By completing words within the quotation the corresponding letters will then appear in the word puzzles below. This continues until you (hopefully!) complete all the clues and the quotation itself.

After loading the disk, I am met by a menu screen offering a selection of five puzzles. After choosing the first one (and hoping that it's the easiest) the game completes the final loading procedure and I am greeted by the main play screen.

This screen is split into three areas: The Phrasebox covers the top third of the TV screen. Below the Phrasebox are the columns of the Wordlist. At the bottom of the screen is the Definition/Byline area. At this point there are only empty dashes awaiting the input of letters. Each dash within the Phrasebox and Wordlist represents a letter of a word.

You control the input of letters by moving a cursor around the screen with the arrow keys. When the cursor is on a dash within the Wordlist, a definition of that word will appear at the bottom of the screen in the Definition/Byline area. To solve the puzzle you must move the cursor through the columns of the Wordlist and enter the words as defined at the bottom of the screen.

Sounds complicated? It's not. Although difficult to describe, Autocrostics is very simple to play; but it's definitely not simple to complete! A good dictionary is a handy tool.

The five puzzles on the disk range from "easy to difficult". Easy? Hmm, I'd say more like average to difficult; but then again, I'm no expert at crossword puzzles!

I found Autocrostics surprisingly enjoyable. I think this was due mainly to the old favourite of C&VG reviews - originality. It was different from my normal trek through the crossword on the back page of my local newspaper. It was very user-friendly with lots of options to help you move about the screen, identify linked letters, print and save puzzles, etc. I also enjoyed trying to figure out the quotation in the Phrasebox (which in turn helped me to complete clues in the Wordlist). However, I would say that Autocrostics will appeal mainly to fans of crossword puzzles and word games in general. What's that? You want to know how many puzzles I completed? Well, I think it's time we moved on ...

CLASSIC PD ZONE RATING: 74%

MENU MAKERS

Menu Makers consists of fifteen utility programs which together offer you the complete package for making menus. There are four Basic/binary file menus, four Basic file menus, four binary file menus and three ARS makers (more on these later). Whether you want to produce professional menus for a disk newsletter or just something quick to organise your disks, this disk may be of interest to you.

After booting the disk with Basic you are greeted by the first menu program - ***Index Solution V2.4***. This is a nice looking menu with a wide range of features.

At the top of the screen is the title of the disk. Below are the first sixteen files on the disk. You can access any further files by pressing Option. To load a file you use either a joystick or the Select key to move down the list of files until the desired file is highlighted. Press the joystick button or Start and the program will autoboot.

Below the list of files is an information box which contains the default drive number, the number of files on the disk and the number of free sectors remaining.

Pressing H will take you to the help screen. Here you are told which keys to press to access all of the features. With Index Solution you can erase or rename files, format disks, load new disks, print directories (very handy), switch from Run program to Load program, title an Index Solution disk and lock or unlock files. A very impressive array of features!

Index Solution will load either Basic or binary files. My only minor gripe is it takes up 37 sectors of a disk - slightly more than a standard menu program. However, I feel this is worth it because of the many extra features available.

The other three Basic/binary menus on the disk are ***Load-It***, ***Disk Directory*** and ***MenuPlus V2.5***. Load-It is a program for creating the type of menus found on Analog issue disks. Limited DOS functions are also available.

Disk Directory is very similar to Index Solution but it is very slow at reading the disk directory (a crime for any menu program). Also, it takes up 67 sectors of the disk!

MenuPlus V2.5 is a standard Graphics 0 menu with limited DOS functions and a printout option. However, it's one of those awful menus where you have to enter R to run a program and then enter the program number. Yeuch!

For a Basic/binary menu I suggest you use either Index Solution or Load-It. Both are very good and load most programs.

The four Basic menus on the disk are ***JACE Atari Freeware Menu***, ***Atari PD Library Menu***, ***Bellcom Basic Menu*** and ***Disk Menu***. All four are standard Antic-type menus. My favourite was the Bellcom Basic Menu. It looks good and gives a little chime before lòading the disk directory.

For binary files there are four menu programs. Without doubt, the best is ***Microdos XL Creator***. This program creates a DOS.SYS file of only five sectors. There is no need for

any DUP.SYS file. This leaves you 702 free sectors on a single density disk! Microdos XL will load about 90% of your binary programs from an impressive looking menu.

The other binary menus on the Menu Makers disk are ***ML Menu***, ***Binary File Menu Maker*** and ***Boot Menu Edit V2.3***. I didn't like any of these and had problems loading files from ML Menu and Binary File Menu. But then again, Microdos XL is all you need!

I mentioned above that there are three ARS makers on the disk. For those who don't know, ARS stands for AUTORUN-.SYS; the small binary file which is automatically loaded after booting a disk. The three programs provided are ***AutoMate***, ***RunAuto Basic*** and ***AutoRun***. AutoMate and RunAuto Basic will autorun any specified Basic file. AutoRun will only run files named MENU. All three are quite adequate but I still prefer Personal Autoboot from Page 6 Issue Disk 49.

As you can see, Menu Makers contains more than enough to help you create menus. With Index Solution 2.4, Load-It, JACE Atari Freeware Menu, Bellcom Basic Menu, Atari PD Library Menu, Microdos XL, AutoMate and RunAuto Basic you will be able to create a menu for almost any Basic or binary file. Unfortunately, the other seven programs on the disk aren't up to much and to be honest, aren't really necessary. I would have preferred a few disk utilities to assist in the organisation of a software collection.

Overall, Menu Makers is not exactly a spectacular disk but it is very useful. I have used it continually over the past three years and it still sits in the small disk box beside my drives. Not many disks make it into that box! A very useful disk.

CLASSIC PD ZONE RATING: 82%

ML ACTION

The final disk for this journey into the Classic PD Zone is ML Action; a games disk featuring five arcade games.

Snowball Fight is a two player arcade game which pits you and an opponent against each other in one of the great winter pastimes ... the snowball fight!

After pressing Start, the snow landscape is randomly drawn (very fast). Next, the two players enter and take up position on opposite edges of the screen ... let battle commence!

You pick up snow by pulling your joystick down. The more times you do this, the bigger your snowball gets. Next you press your button, move your arm back and let go of the button to throw the snowball. However, there is a background wind which constantly changes in strength and direction. This makes it quite difficult to judge the flight path of your snowball and adds to the excitement.

There are two coloured lines at the top of the screen which represent the amount of energy remaining for each player. If you are hit by a snowball your line shrinks.

Put simply, Snowball Fight is a wonderful example of an 8-Bit game. The graphics are very ordinary but the gameplay is outstanding and perhaps, dare I say, unbeatable! The only bad point about the game is a small bug which occasionally causes the program to crash after a few games. You must then re-boot.

Even with the small bug, I can honestly say that Snowball Fight is one of the best two-player games ever programmed on any computer! I rate it second only to Kick-Off 2 on the ST and perhaps Capture the Flag. If you enjoy two player games you must see Snowball Fight!

The second game on ML Action is ***Xevious***. This is a vertical shoot-em-up which has become a cult coin-op classic. You must fight through waves of enemy spaceships and bomb enemy gun emplacements.

Not everyone realises that there is a good version of Xevious for the Atari 8-Bit. Atari released Xevious on the 5200 and 7800 VCS systems (the 7800 cartridge is excellent). The 8-Bit version on this disk was converted from the 5200. It is quite good with all the usual Xevious features including the atmospheric background sound and almost indestructible end-of-level mother ships. There is automatic missile firing in this version (this allows you to concentrate on bombing the gun emplacements). A creditable conversion.

Next up is ***Lunar Defender***. This is yet another version of Defender. However, this one is awful! Colourful graphics and nice explosions are ruined by terrible gameplay. Enough said; let's move on...

Star Island is very original. It's like a cross between Asteroids and Space Invaders. You control a colourful Asteroids-type ship and must attack an enemy ship which is protected by three turning circular force fields. To get to this ship you must first blast through the force fields. However, you have to continually thrust around the screen because of slow moving lock-on missiles and high-speed target missiles. And that's not all! If you completely destroy a forcefield another replaces it. Therefore, to blast through all three you must hit them at the same point. Even this isn't easy because they turn in opposite directions! A very good and original shoot-em-up.

The final game on ML Action is ***Galactic Chase***. This is a first class Galaxians clone which is almost as good as the Atari Corp. cartridge. Galactic Chase looks good, plays well and, best of all, is in the public domain!

In conclusion, I was very impressed with ML Action. Snowball Fight is a worthwhile addition to any software collection and there is also the bonus of three quality shoot-em-ups on the disk too. Don't miss this one!

CLASSIC PD ZONE RATING: 93%

See-Ya!

We are now returning to Earth so please return to your seat, put on your safety belt, grab the arms of your chair and scream ... Snesiscrap! That's Pudosian for 8-Bit power! The Atari Classic: A rebel WITH a cause! Hey, what happened to the musician? Looks like he got left behind but maybe we'll catch him on another trip.

This issue's reviews have been:

DISK #57 - ML ACTION
DISK #92 - MENU MAKERS
DISK #164 - AUTOCROSTICS

with Stuart Murray as your guide

GAMES YOU CAN GET A KICK FROM!

Kevin Cooke kicks up the dust with a roundup of martial arts games

Although the Atari Classic never seems to have have had a street fighting game released for it, one thing is has had quite a few of is martial art games. So, with the l;ikelihood of no new martial art games being released, I decided to take at the ones already available.

KARATEKA

The steady flow of martial art games probably started with **KARATEKA**. This game was first released by Broderbund software, and later released by Atari on one of their XE video game cartridges.

Your quest in this game is to rescue the beautiful princess Mariko from the warlord Akuma. The graphics and animation are superb, and the game is a joy to play. The game also has a one or two player option so should cater for all of your needs. The only problem is the slightly slow movements of your character and the enemies, but this hardly lets down this wonderful game. I would recommend you buy Karateka, especially if you can find it at a reasonable price.

THE CHAMPION!

The next game on the list is the incredible **INTERNATIONAL KARATE** (a.k.a. World Karate Championships?), released by System 3. I remember buying this game at one of the Atari computer shows and being over the moon with it. The graphics are so good that you won't believe it's an 8-bit game. The animation is also incredible and the game incorporates sixteen different moves. At regular intervals in the game the players get a chance to either smash a pile of slates with their characters head, or jump and duck to avoid the ninja stars and spears being thrown from the sides of the screen. I would rate this game even more highly than Karateka. Make sure you don't miss this one, as it should be in EVERY Atari owners game collection.

ENTER THE DRAGON

BRUCE LEE, released by U. S. Gold/Datasoft, was yet another of the martial art games released for the Atari. You may be disappointed if you expect the game to be all kicking and punching as it is more of a platform game than a martial art game. Don't be put off by this though as it is a great platform game that is a great deal of fun to play. The small fighting element actually improves the game quite a lot. Another fun game element is the two player option which allows both players to take it in turns being Bruce Lee, or one player to be Bruce and one to be the evil Yamo with both playing at once. Despite the lack of moves to perform, the game is an excellent investment, especially for platform freaks.

IN THE BLACK MASK

Mastertronic also released a martial arts game for the Atari called **NINJA**. This game requires you to rescue a princess (yes, the same as in Karateka - why can't these princesses be more careful?). Not only this, but on your way you must also collect 6 idols (which double as useful collections of extra energy) to be able to get into the final room. Your range of weapons include two ninja stars and a knife which you can throw at your enemies (but which can also be used by your evil ninja's), a sword, and your three kicks and three punches. The animation is almost as smooth as the other games, and the graphics are also very good. The only let down is the lack of a two player option, but this doesn't detract from the game's playability level. This game is a bargain at it's budget price. With practice you may even rescue the princess.

FANCY A CHINESE?

Another martial arts game, this time released by English Software, was **CHOP SUEY**. The main game takes place on a stage in front of a fairly large animated crowd. You get to face another fighter to battle it out until one of you can't fight any longer. As with all of the other martiál art games, the animation is again very smooth and the graphics are also quite good. Having only eight or nine moves doesn't seem to matter much either. One of the hardest parts of the game is avoiding the oriental scorpions that drop down from the air vents in the stage ceiling. One touch from them and you will lose that part

of the fight instantly. If you can find this game at a good price (maybe as part of a compilation), then buy it as it is quite good value.

MASTERING THE MASTER

NINJA MASTER (released by Firebird) was one of the last so called martial art games to be released for the Atari. Don't buy it if you are expecting a martial arts game though as this game is simply a test of your reflexes using a ninja as the central character. Having a reaction test sounds good fun until you realise that the game's response to your joystick movements is pretty bad, making is seem almost impossible to actually hit the objects that fly in at you. You have to be incredibly precise just to hit anything. Despite this, it does seem quite addictive, and at it's budget price isn't a bad buy.

NINJA COMMANDO has to be the last martial arts game to be released for your much loved machine. It is a shame that the game didn't have more to do with martial arts though as, again, the game simply involves a ninja as its main character (although how long true ninja's have used flame throwers and machine guns, I don't know!). Apart from this is is quite a good platform game (although a little hard). If your tastes lie in platform games rather than martial art games, then this is still a good buy at it's budget price.

A COUPLE MORE

Even if there are only six martial arts games commercially available (as far as I know), I also know of two games available in the public domain, that should please martial art fans. **KUNG FU** is a game available from the Page 6 public domain library. The idea of the game is for your character (Kung), to beat your opponent (Fu). Admittedly, the graphics are very basic, but the game is quite fun to play (at least for a while). It also gives a one or two player option which is great if you play a lot of games with someone else. As it comes with other games (although non-martial art ones) on the Page 6 library disk, it makes it good value for money.

The only other martial art game I know of in the public domain is **KARATE MASTER**. The main character and the animation in this game is remarkably like the character and animation in Karateka. The difference is that in this game you are competing in a martial arts tournament where you meet people such as Billy the Bully, and The Panther. This game is every bit as good as Karateka, and is *definitely* worth the tiny price. Although the control is by keyboard, this does not make it any harder to play, and as this game is also on a disk with another game in the Page 6 library, there is no excuse to miss this great game. When you get quite good at this game, don't forget to remove the write protect tab from the disk as it seems to try to write your high score to disk and produces an error if the disk is write protected.

So just where can you get these games from? Most of the games mentioned above are available from at least one of the following: The Page 6 Accessory shop, Derek Fern (Micro Discount), and Gralin International. The public domain games are available from Page 6. Some of the games mentioned may be hard to find now, but try to track them down, as I'm sure you'll get a kick from them!

Ian Finlayson's

TUTORIAL TIME

A BRAIN TEASER

Preparations for the October magazine are made around August. In this summer period I have been a long way from my Atari with a combination of holidays and work, so I thought I would share with you a brain teaser I have found challenging.

The test is to take ten counters and lay them out on a four by four grid in such a way as to make the maximum possible number of lines with an even number of counters in. The lines can be vertical, horizontal or diagonal. An example scoring 10 (4 horizontal, 2 vertical and 4 diagonal) is shown in Fig 1. It is quite easy to score more than ten just by trial and error, but what is the maximum possible? Is there a proof that will give the maximum number? If you tire of looking for the maximum what is the minimum score? If you find interesting solutions please write and let me know, particularly if you find a way of using your computer to help solve the puzzle. I will give a small prize for the best submission (in my opinion).

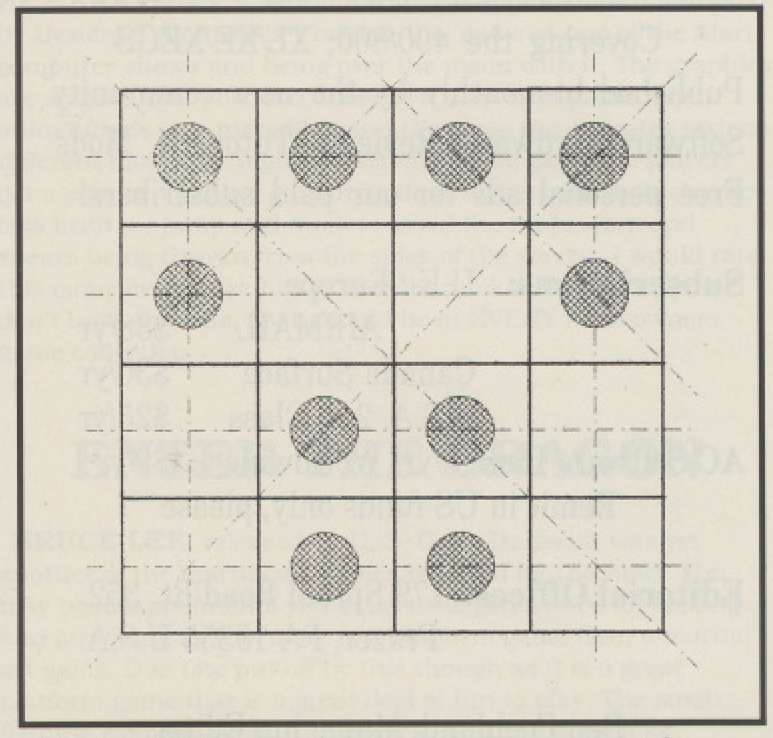


Figure 1: Brain Teaser Example solution

BOX DRAWING

To assist in your attempts to solve the puzzle the short program listing is designed to print a set of sixteen 4 by 4 grids. If you follow the listing through you should be able to create "box" drawings for your own requirements. It can be particularly useful to be able to print score sheets for games -the little score pads supplied with many games run out very quickly.

The program is not difficult to follow so I will not do my usual line by line description, but there are a couple of things that I will describe in detail.

The box drawing characters are always a problem because they are not part of the basic ASCII set. This means that they may be found in different places on different printers, and you have to be sure you are using the right character set in your printer. Most printers these days have more than one character set and you can switch between them either by control code sequences or by setting up the printer itself through small switches or a control panel.

I have an HP Deskjet 500 printer and the box draw characters are available with the default DIP switch settings, but these change to letters with accents if the English setup is used. With an Epson FX-80 the default setting seem to give Italic letters, and box draw becomes available when the printer is set up in IBM PC or PC-850 modes. In both cases the box draw symbols have the same numeric values (as shown in lines 22 to 26 of the listing) but this may not be the case for other printers that do not have HP or Epson compatibility. Fig 2 shows what you might get with the correct and incorrect character sets.

Lines 22 to 26 are where the characters are defined. Line 22 is for the top line corner symbols, 24 for the centre lines and 26 for the bottom line while line 28 defines the horizontal and vertical straight lines that join the corners. If the program does not give the expected drawing with your printer you may be able to find the correct values to go in here in your printer manual.

The lines that are built up for printing are TOP$ for the top line of the grid, MID$ for the middle lines and BOT$ for the bottom line. BOX$ is the line that contains the vertical straight lines that connect the top with the middle and the bottom.

One other item that I will explain is illustrated by line 32. If you want to fill a string with a single character it can be done by defining the first and the next to last characters and then using a statement of the form STRING$(2)=STRING$. I have filled the string TOP$ in this way with the horizontal line character before adding the corner characters in their correct places.

I hope you have fun with the brain teáser and find good use for box drawing. As always I will try and assist with your BASIC programming problems if you send details and a SAE.

Write to Ian Finlayson, 60 Roundstone Crescent, East Preston, West Sussex, BN16 1DQ

```
WO 1 REM ******************************
CR 2 REM *    TUTORIAL SUBROUTINES    *
DB 4 REM *  BRAIN TEASER & BOX DRAW   *
XU 5 REM *            by              *
CO 6 REM *       Ian Finlayson        *
OG 7 REM *----------------------------*
HQ 8 REM * NEW ATARI USER - OCT 1993  *
WW 9 REM ******************************
AY 10 REM
KI 20 DIM A$(1),B$(1),C$(1),D$(1),E$(1),F
   $(1),G$(1),H$(1),I$(1),J$(3),K$(1)
PM 21 DIM TOP$(80),MID$(80),BOT$(80),BOX$
   (80)
ZE 22 A$=CHR$(218):B$=CHR$(194):C$=CHR$(1
   91)
HF 24 D$=CHR$(195):E$=CHR$(197):F$=CHR$(1
   80)
JF 26 G$=CHR$(192):H$=CHR$(193):I$=CHR$(2
   17)
VB 28 J$=CHR$(196):K$=CHR$(179)
FS 32 TOP$(1)=J$:TOP$(16)=J$:TOP$(2)=TOP$
   :MID$=TOP$:BOT$=TOP$
AD 34 TOP$(1)=A$:TOP$(5)=B$:TOP$(9)=B$:TO
   P$(13)=B$:TOP$(17)=C$:TOP$(18,20)="
   "
BQ 36 TOP$(21,40)=TOP$(1,20):TOP$(41,77)=
   TOP$(1,37)
KP 44 MID$(1)=D$:MID$(5)=E$:MID$(9)=E$:MI
   D$(13)=E$:MID$(17)=F$:MID$(18,20)="
   "
SJ 46 MID$(21,40)=MID$(1,20):MID$(41,77)=
   MID$(1,37)
QP 54 BOT$(1)=G$:BOT$(5)=H$:BOT$(9)=H$:BO
   T$(13)=H$:BOT$(17)=I$:BOT$(18,20)="
   "
IQ 56 BOT$(21,40)=BOT$(1,20):BOT$(41,77)=
   BOT$(1,37)
UH 60 BOX$(1)=" ":BOX$(16)=" ":BOX$(2)=BO
   X$
WQ 62 FOR X=1 TO 17 STEP 4:BOX$(X)=K$:NEX
   T X:BOX$(18,20)="   "
XD 66 BOX$(21,40)=BOX$(1,20):BOX$(41,77)=
   BOX$(1,37)
JD 100 FOR ROW=1 TO 4
WS 110 LPRINT TOP$
YI 111 LPRINT BOX$:LPRINT BOX$
XB 112 FOR X=1 TO 3:LPRINT MID$:LPRINT BO
   X$:LPRINT BOX$:NEXT X
QX 113 LPRINT BOT$
IH 114 LPRINT :LPRINT
EW 120 NEXT ROW
```

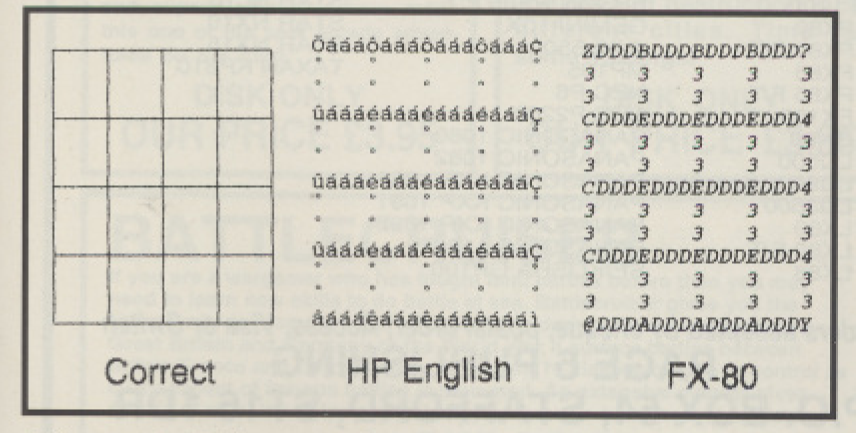


Figure 2: Print results

DISK BONUS

SUPERQUERG CHESS

and

NEGAQUERG CHESS

Chess input and machine code programming by John White

Programs and documentation copyright John White

SuperQuerg Chess is a third generation program with alpha-beta pruning and iterative deepening. An alpha-beta window is also employed. Uses Shannon A and B strategies, killer heuristic and chopper functions, new methods for searching to deep levels and for other game strategies. Features include:

- 250 normal levels, set by timer (2 - 252 seconds)
- Castling
- En passant
- Illegal moves rejected
- Clear screen display (suitable for colour or b&w TVs)
- Book openings and opening strategy
- Special endgame routines
- Machine 'thinks' while it awaits your move
- Hint for your move
- Display of best move yet found
- Stop key to halt computer analysis
- Clock display of computer's time
- Display of nominal level of ply search
- Dynamic adjustment of ply search according to remaining time
- Problem analysis
- Mate-finding
- Underpromotion of pawns
- Last 64 moves stored and optionally printed

PROGRAM PHILOSOPHY

Querg Chess is unusual among chess programs in that it relies more on the strength of its positional strategy than on its tactical play. Artificial Intelligence methods are used to switch between strategic and tactical searching, as the program considers appropriate.

Comprehensive documentation explaining all the options and methods of play are contained on the disk and may be printed on any printer. The documentation is also available in printed format upon request. Please state if you require printed instructions when ordering

SUPERQUERG CHESS is the BONUS programs on the Issue 63 disk. Disk subscribers will receive their copy with the magazine but the Issue 64 disk is also available separately for just £2.95. Order your copy from PAGE 6, P.O. Box 54, Stafford, ST16 1DR or by phone to 0785 213928 using your Access, Visa or Switch card.

contact ... contact ... contact ... contact

FOR SALE

XL/XE SYSTEMS: Two 800XLs, a 65XE, 1050 drive and various cassettes all in working order plus other hardware for parts, most in original boxes all with leads etc. Plus lots of serious software, books, manuals, magazines including current subscription to NAU. Bargain at £290 - Buyer collects or pays delivery. Phone Ron 04353 2021

COMPLETE SYSTEM: 800XL with parallel port/cupid interface, green screen monitor, 2 x 1050 drives, 410 recorder and Phonemark recorder. Visicalc, Mini Office 2, Assembler/Editor cartridge, Macro ass/prog, Text Editor, OSS Basic XL plus other disks. £300 the lot, will consider split or offers. Phone 0623 861180

XL & XE SYSTEMS: 130XE, XF551 with 20 original games in boxes and Page 6 disks - £125. 800XL, 1050 and 14 boxed games plus library disks - £125. Plus various other hardware and magazines. Buyer collects or pays postage. D Naylor, 147 St. Andrews Rd., Coulsdon, Surrey - 081 668 2610

XE SYSTEM: 130XE, 2 x 1050 drives both with upgrades, super archiver, 1029 printer, 2 disk boxes full of disks. 2 joysticks, track ball, touch tablet and art package, over 250 games, adventures and serious software, books, manuals and magazines. £200 no splits. Phone Dave or Judy on 05242 72007

BARGAIN: 65XE, XC12 tapedeck, £200 worth of games on Rom and cassette plus joysticks, magazines, manuals etc. - worth over £350 - quick sale £95 Phone 0757 228406

XE SYSTEM: 130XE, 1050 drive with transformer all built into custom stand. Page 6 mags - 4 to 6 and 8 to 63 plus Atari User mags - various. Taritalk, Omni View and other bits and pieces. No reasonable offer refused - phone 0325 352805 or write to A Raper, 17 Edgecome Grove, Darlington, Co Durham

XL SYSTEM: 800XL with internal Centronics interface fitted for a printer. Additional Omnimon Rom fitted for machine code monitor and assembly language programming. 1050 drive fitted with Doubler/Happy utilities. Original packaging. £170 phone (Macclesfield) 0625 420782

VARIOUS HARDWARE: 800XL £20 - 1010 Recorder £10 - 850 interface (no instructions) £20 - 410 recorder (needs power supply) £4 plus other bits & pieces. Phone 0268 287202

PRINTER: Panasonic KX-P1081 9-pin dot matrix printer with box, manual, spare ribbon and dust cover. £65 plus carriage. Write to Paul, 17 Spring Rd., Clifton, Shefford, Beds SG17 5RE

XL SYSTEM: 800XL and 1050 with manuals £80. 1029 printer with manuals £65. Also cassette and disk software. A A Dallard, 200 Millfield, Creekmoor, Poole, Dorset BH17 7XQ Phone 0202 605334

XL SYSTEM: 800XL, 1050 drive, touch tablet and Atari artist (Rom) 1010 turbo load tapedeck. Books, including Your Atari Computer, Software including Qix and Logo - masses of disks with serious software and magazines which include early Page 6. All for £180. plus other hardware for spares. Please phone Andy 0273 583551 after 6.30pm

WANTED

XE CARTRIDGE: Production test cartridge wanted and loop back jumpers. Also a light gun or light pen and 'Elite' for the XE. Reasonable price paid. Please write to Mark Watson, 122 St. James Rd., Bridlington, Yorks YO15 3NJ

LEADS: Printer, Disk Drive and all connection leads wanted for an 800XL, must be in good working order and reasonably priced. Phone Steve on 081 470 7129

HARDWARE: 130XE, data recorder preferably with games, must be in excellent working order, also disk drive wanted. Cash waiting for best set-up. Phone David on Oxford (0865) 773288

DESPERATE: Hitchikers Guide to the Galaxy and Theatre Europe (Disk versions), Mapping the Atari wanted. Also does anyone out there know where I can get my 1027 repaired. Please phone Paul on 0579 20951

CASSETTES: Copies of the following wanted: World Cup Manager, Leaderboard, Decathlon, Winter Events, Goonies, Spellbound and Trivial Pursuit, reasonable price paid. Simon Reeder, 8 St. Peters Close, Brinsworth, Rotherham. S. Yorks S60 5NJ

PRINTERS: A printer wanted for an XL system either a 1025, 825, 1020 or a 1027 - no thermal printers please, will pay around £40. Phone Ben on Bracknell (0344) 50828 after 5pm or write to B H Saunders, 28 Ollerton, Hanworth, Bracknell, Berks RG12 7RA

WARGAMES: Wanted a copy of Wargames (Coleco/1984) on tape. Also Mission Zircon/Colony and ET Phone Home on Rom. Good price paid. Write to L Robbins, 30 Marble House, Felspar Close, Plumstead, London SE18 1LN

TOUCH TABLET: Wanted and Atari Artist also 1027 LQ printer. Phone John or Noel on (0271) 816221 or write to J Harris, 15 Staddon close, Braunton, N Devon EX33 1LT

WANTED: Superdos 5.1 (or higher). Will pay £10 for the program. R De Letter, Europaprylsaan 34, 9060 Zelzate, Belgium

POWER SUPPLY: For the 1010, also any information on a Tandata TM 512 Modem, a user guide for the 850 interface, a stepper motor for an 810 drive and info on hard drives for the 8-bit. Phone Sid after 7pm on 0233 645494 or write to Sid Berry, 17 Old Pond Rd., Ashford, Kent TN23 2QX

PEN PALS

CONTACT WANTED: I own an XL and XE cassette system and want to make contact with other users for help, hints and tips etc., - please write to Simon Reeder, 8 St. Peters Close, Brinsworth, Rotherham, S. Yorks S60 5NJ

ATARI EXTREMIST: Seeks natty people for all subjects. Also wants the book Compute's Electronic Computer Projects. Write Andy Thompson, 135 Henllys Way, St. Dials, Cwmbran, Gwent NP44 7NF

CONTACT is FREE of charge and may be used by any genuine Atari enthusiast for contacting other owners. Any notice may be included except those offering software only for sale or exchange or those offering items for sale commercially. The Editor reserves the right to omit or edit any notice received at his discresion. If space is tight, notices may be shortened and addresses may be omitted with only telephone numbers being published.

Send your CONTACT notice to CONTACT, PAGE 6, P.O. Box 54, Stafford, ST16 1DR. Please write your notice on a separate sheet of paper, not as part of a letter.

FOR SALE ... WANTED ... PEN PALS ... ADVICE ... HELP ...

THE ACCESSORY SHOP
ISSUE 64

YES, IT'S IN STOCK!

RALLY SPEEDWAY



A colourful scrolling roadscape provides an exciting backdrop for fuel-injected action. Choose one of the two courses provided or construct your own. Players are challenged to hot-rod their cars down gruelling straights, around hairpin corners past an ever changing landscape. Work on your lap time with a solo game or invite a friend along for a one-on-one duel to the finish.

ROM **OUR PRICE £8.95**

MORE NEW SOFTWARE

We had a bit of an embarassment last issue, as many of you will know, because many of the items advertised were available in such small quantities that we quickly sold out (we had to prepare the issue in advance). This time we do have good stocks of all the items, many of which have not been offered before. Take a good look through and stock up for the long winter nights. We need your continuing support.

MAKE THAT COMMITMENT

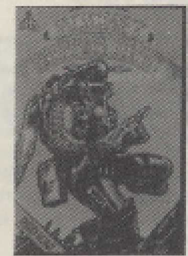
NIGHT MISSION PINBALL



The ultimate arcade simulation with five bumpers, seven stand-up targets, nine rollovers, two spinners and much more. So realistic you have to insert a quarter before you can play. So true to life you can even tilt the computer! Night Mission Pinball offers ten different modes of play for 1 - 4 players. Forty user-adjustable parameters allow you to create your own custom games or redesign any play mode to your own specifications. Beautifully packaged and with an excellent manual, Night Mission Pinball will save you money by keeping you away from the arcades!

DISK ONLY **OUR PRICE £7.95**

ROCKET REPAIR MAN



Buried somewhere in the underground maze of caverns of the planet Leskos are essential components of your Astro-ship. Get into your space suit, strap on your Jet Pack and begin the most terrifying descent imaginable. You must collect pieces of a rocket in which you can escape but beware the dreaded Neutino Ghosts and the Quark Phantoms out to stop you. Another neat game from Red Rat.

DISK ONLY **OUR PRICE £3.95**

DRUID

Another classic in which, as Last of the Great Druids, you wander through the Dungeons of Acamantor with your mighty Golem by your side on a quest to destroy the four demon princes. As you delve deeper into the dungeons you will find chests containing spells of formidable power to aid you and Pentograms of Life which will heal and revitalise you. Excellent graphics and superb gameplay have made this one of the best arcade adventures on the Atari.

DISK ONLY
OUR PRICE £3.95

RAMPAGE

It's rough and tumble all the way as you control three incredibly nasty characters which bear a remarkable resemblance to King Kong, Godzilla and Wolf-man through an orgy of destruction in Chicago, New York and San Francisco. You have 150 days of destruction in 50 different cities. Time for some revenge!

DISK ONLY
OUR PRICE £3.95

HARDBALL

All the thrills of American baseball can be yours on a summer afternoon in the ballpark. Sit behind home plate, along the left field line, down the right field line or join the manager in the dugout. Look over the pitcher's shoulder as he throws the next ball. You control all the action of the batsmen, pitchers and fielders as you try and battle your way to the top of the league. An exciting game for one or two players.

ROM CARTRIDGE
OUR PRICE £7.95

NEW YORK CITY

Welcome to The Big Apple. This hurried jungle of steel, concrete and glass bristles with fascinating sights and more than its share of danger. From the placid greenery of Central Park, there is no city in the world like New York, and boy are you about to find that out! As a visiting tourist you only have a limited time to see all the sights, but New York City has a little more excitement, a little more danger in store than a mere sightseeing trip to the zoo!

DISK ONLY
OUR PRICE £3.95

BATTLECRUISER

If you are a wargamer who has fought land battles before then you may need to learn new skills to do battle at sea. Battlecruiser gives you the opportunity to recreate naval engagements during Word War I between Great Britain and Germany or the World War II surface battles between Britain/France and Germany/Italy. There are 79 classes of ship to control as every aspect of famous battles is recreated. An extensive manual gives details of all of the ships and guides you through every aspect of play.

DISK ONLY **OUR PRICE £7.95**

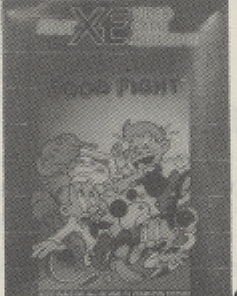
PLASTRON

Take your place in a small band of pirates out to steal fossil fuels from the biggest corporation in the galaxy. You must guide your shuttle craft along the surface of the planet Plastron to collect as much fuel as you can from the heavily defended mine zones and then rendezvous with the supply tank at the end of each level. Plastron got a good review in New Atari User and has some excellent graphics.

CASSETTE ONLY **OUR PRICE £2.95**

More new software

FOOD FIGHT



Charley loves to eat. One day he visits the carnival and heads straight for the Food Fight contest. Help Charley hurl mounds of fabulous food at disgruntled chefs. Spinach, bananas, tomatoes, watermelon will be thrown about as you try and make the chefs retreat. You are after the giant ice cream cone that awaits if you make it across the screen. Enjoy the fight ... and the mess!

ROM **OUR PRICE £7.95**

ADVENTURE PACK

*Four of the famous Channel 8 text adventures on four cassettes for just £2.50!**

You get WAXWORKS, ARROW OF DEATH Part 1, ARROW OF DEATH Part 2 and THE GOLDEN BATON on four separate cassettes, each boxed, for just £2.50

It must surely be time for you to try your hand at adventure!

*Usual postage per order applies

SILICON DREAMS

Taking the role of Kim Kimberley you are a leading participant in the colonisation of Eden, a planet prepared for human habitation by an advance guard of intelligent robots who battle with the native and highly aggressive fauna. In this highly structured and realistic environment you must move your mind into the twenty-third century. Silicon dreams comprises three excellent graphics adventures - SNOWBALL, RETURN TO EDEN and THE WORM IN PARADISE from Level 9, the masters of adventure

DISK OR CASSETTE **OUR PRICE £5.95**

GAUNTLET - THE DEEPER DUNGEONS

If you have the original Gauntlet disk then you will know how good the game is and will want to extend play with the Deeper Dungeons. Over 500 new dungeons are here for you to explore. This is the way to revive your interest in Gauntlet and play on for many more hours or days! This is a data disk only and requires the original Gauntlet disk.

DISK ONLY **OUR PRICE JUST £2.95**

CROSSFIRE

You are alone in a deserted city surrounded by aliens who shoot lasers from every direction. Your movements are confined but you haven't given up. If you are to survive you'll have to concentrate on where the shots are coming from otherwise you'll be caught in the CROSSFIRE. One of those fairly simple yet highly addictive games.

CASSETTE ONLY
OUR PRICE £2.95

THE E FACTOR

The E factor represents the amount of time the energy sources on the planets in our galaxy will last. Many planets need emergency fuel capsules delivered if they are to survive. You must plot the interplanetary course and guide your craft through the quadrants filled with obstacles such as space mines, alien fighters and spinning asteroids. Can you complete a mission and deliver your energy crystal before another planet calls on your services?

DISK ONLY
OUR PRICE £3.95

THE COUNT

One of Scott Adam's famous graphic adventures in which you awake in an antique brass bed in a dank, desolate castle. It soon looks like you are going to meet a certain toothy Transylvanian Count who goes by the name of ... Dracula! Will you escape or become one of the living dead? An adventure with full graphics, moderate level for ages 10 to adult.

DISK ONLY
OUR PRICE JUST £2.95!

ARCHON

A unique battle combining elements of fantasy with the strategy of the chessboard. Your men represent the forces of good and evil and when they each occupy the same square the board bursts into life with banshees, goblins and sorceresses. They cast spells, throw flames, even take on each other's shapes and characteristics. You can play the Light or the Dark either alone or with another player. A totally unique game.

ROM CARTRIDGE
OUR PRICE £7.95

THE LIVING DAYLIGHTS

Control James Bond through eight fast and furious levels from Gibraltar to Afghanistan and you will encounter the SAS (friendly), the KGB (not so friendly) and enemy helicopters (very unfriendly!). Your are up against Brad Whittaker, international arms dealer and megalomaniac, Necros, his ruthless sidekick killer and Koshkov, the double dealing KGB General. You may fall in love with the beautiful Czech cellist Kara, but can you trust her?

DISK ONLY **OUR PRICE £3.95**

MONTEZUMA'S REVENGE

Wherever there's mind-bending mystery, hair-raising adventure and non-stop action, Panama Joe is sure to be there. In Montezuma's Revenge he gets more than he bargained for as you help him through 100 danger filled chambers in the Aztec emperor's fortress. The stakes? Priceless treasure. Finding the necessary keys, torches, swords and amulets is no easy task as Joe tries to avoid deadly snakes, spiders and bouncing skulls. Disappearing floors, bridges and laser walls are no picnic either!

DISK ONLY **OUR PRICE £3.95**

AIR RESCUE

Peace is shattered as the Military Junta moves against the popular uprising. Civil war rages forcing expatriate Britons into hiding to escape the guns, tanks and missiles of the opposing armies. There is only one way to get them out ... Air Rescue! A cracking arcade game based on the classic Choplifter. Fly your copter and rescue your fellow countrymen but don't get shot down.

CASSETTE ONLY **OUR PRICE £2.95**

ATARI USER TOOLKIT

Now programmers without a disk drive can take advantage of programming aids normally the preserve of disk drive owners. The Toolkit adds several commands to Basic such as Delete a block of lines, Renumber programs, Change variable names, List Variables, Remove all REMs, Convert Hex to decimal and Print listings to Epson compatible printers. Just boot the tape and all these additional commands are ready to use with your next program.

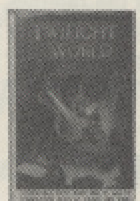
CASSETTE ONLY **OUR PRICE £2.95**

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Prices start at £1.95 each and reduce according to how many you buy ... and you can mix these with our regular cassettes shown on the inside front cover

Now you have OVER 40 cassettes to choose from!



TWILIGHT WORLD

Enter the Twilight World. Equipped with the latest in anti-gravity pods and Laser weaponry, battle your way through each of the eleven dungeons defeating their fiendishly devious inhabitants along the way. A game from Atari themselves!



MR DIG

An old favourite in which Mr Dig has to dig for hidden food supplies in the 'Meanie' territory below ground. As he digs he can eat cherries or crush the Meanies with apples. Special treats earn extra points and a Magic Power Orb can kill all the Meanies.



SIDEWINDER

The original Sidewinder has you flying the high-tech Sidewinder hunter-killer helicopter through spectacular underground caverns, past the enemy defences and security systems to your home base on the hospitable surface. More great graphics from Zeppelin Games



AZTEC CHALLENGE

At the ancient Mexican pyramid of Tenochtitlan the Aztec gods have demanded a human sacrifice. You are one of the chosen! Your only hope of escape is to survive a series of tests in which your agility and stamina are pushed to the limits. Over the centuries your race has developed amazing abilities in running, jumping and leaping - your only chance of surviving the epic Aztec challenge.



ON CUE

Control that cue ball! A challenging real life simulation which combines Pool and Snooker on the same cassette. An absolute must for both enthusiasts and beginners alike. If you have ever wanted to be at the Crucible taking part in the World Championships, now's your chance to practice.



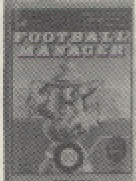
MAD JAX

Someone has been lobbing shells into your nice, cosy little domed city threatening to force the population out into the radioactive wastelands outside. Take up the fast action as you race your heavily armed buggy through the enemy defences. Fight off their forces and survive or your city dies with you.



FRUIT MACHINE SIMULATOR

Code Masters version of the fruit machine that they claim is the first real fruit machine simulator. Features include Cash Box, Nudge Box (with Compu-Nudge and Nudge Bank), Skill Climb, Winning Streak, Cash Gamble, Holds and Mega-Holds, Skill Chances and Party Time Meter.



FOOTBALL MANAGER

Manage the team of your choice. Features include Transfer Market; full League tables; injuries; save game facility; promotion and relegation; FA Cup matches; managerial rating; 4 divisions; as many seasons and you like; pick your team for each match and seven skill levels.



POGOTRON

You have been stranded on a hostile planet, alone, except for the 'turbo-pogo', the only means of transport. You have the plans for a space ship and the search is on to find the equipment and then build the space ship to escape. The final danger is the Guardian who must be destroyed before you can be free.



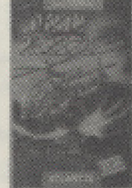
MICRO RHYTHM

Microrhythm converts your computer into a programmable drum system. All of the realistic drum sounds were digitised using the Replay sampling system and eight drum sounds can be arranged in 29 different drum patterns. Annoy the neighbours without buying a drum kit!



STRATOSPHERE

It's five years on, the battle for human life has been successful but only to a point. The remnants of the alien force still menace Earth and it's your task to destroy them once and for all. Some really excellent graphics add spice to this space shoot 'em up.



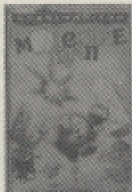
DAWN RAIDER

Fly your heavily armed helicopter gun-ship into the fortified complex of the super criminal that is holding the world to ransom with his nuclear armed rockets. Guide your gun-ship through the great underground cavern, shooting and bombing the defence systems to stop the destruction of the world's cities.



LEAGUE CHALLENGE

Manage your favourite football team your way. No more matches lost because the manager chose the wrong team or played a wrong combination. Now it's your chance to go for Division One or win the league and cup double. You may even find the manager's job is harder than you imagined!



MOLECULE MAN

Lost in a maze with 256 locations you must fight against time and lethal radiation to survive and teleport to safety. Also included is an easy to use, Maze Designer which will allow you to edit the existing game or create a new version. Nice 3-D graphics as you locate and fit 16 circuit boards to escape



CRYSTAL RAIDER

Solve the problems and collect the crystals. Fifty fiendish fatal patterns to be solved! Hours of mind and joystick bending entertainment for those who like their games to infuriate the parts other software cannot reach! Not really an arcade adventure but a series of logic problems to tax you all the way.



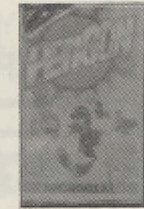
DARTS

Step up to the oche and enjoy all of the fun of competition darts that includes three dart games for the price of one. A choice of these popular games; 501, Round the Board and Cricket are available in this package.



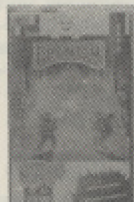
SPACE WARS

Hideous aliens, ground bases bristling with guns, fiendish flying formations and an asteroid belt or three just to keep you on your toes! All you've ever wanted from a shoot 'em up with incredible playability makes this a must for any serious game player. Be warned, it's not for wimps. Be good or be gone!



PENGON

Can you save Penguin Willy from the ferocious mutant sea lions? Stun them by knocking them against the walls or crush them to a horrifying death with sliding ice blocks. High speed arcade action game, full colour graphics and music.



PHANTOM

Something strange has been happening, something quite unnatural. At first no-one took much notice. Those who had experienced it were considered crackpots but now the number of crackpots were too numerous - something strange was indeed going on. Another cracker from Zeppelin Games.



LAS VEGAS CASINO

Save your money yet again by staying at home but this time you can visit many different tables in the Casino. Choose from Black Jack, Craps, Baccarat or Roulette, names that conjure up the atmosphere of the Las Vegas casinos, a world of high stakes. You have $1,000 but the jackpot of $50,000 is waiting!



BMX SIMULATOR

A brilliant version of the epic C64 game. Eye in the sky viewing - amazing realistic simulation, the starting ramp, burms, bumps, water splashes etc. all have realistic effect on the rider. Two player option and seven different courses will test even the best games player.

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Some new ... some old ...

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A highly recommended follow up to Wizard's Crown, this fully graphics based fantasy role playing game will keep you entranced as you battle through the wilderness in search of the enchanted weapon that alone can save the folk of Middle World. Full of magic, mystery and intrigue this is one of the best adventures on the Atari.

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BATTALION COMMANDER



An exciting real-time tactical game with you as lieutenant colonel in charge of an entire armoured battalion. Choose from five different scenarios from a training mission against a Soviet tank battalion to tough assignments against the Chinese. You can adjust the relative strengths of your forces and the opposition and choose from 40 different terrain maps and five different scenarios. Enough variety to last for years!

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Scooter needs your help to get through the eight levels of his enchanted building. Inventive traps and unusual gimmicks abound. Weird sounds have been heard from the new building and the construction men are spooked. What could it be? It's your job to move Scooter up through the eight levels to find the secret. But don't think it's going to be an easy task!

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LASER HAWK

Your Laser Hawk helicopter is ready to go, but are you? To destroy the five command centres of the evil Proc Irata, your ship will have to outfly or blast away its incredible defence systems which include air cannons, smart missiles, falling meteorites, heat rays and high level bombers. Eye stunning graphics and unbelievable non-stop action make this game a winner!

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SEA BANDIT

Challenge the mysterious forces of the deep ocean as you search for glittering lost treasures. There are concealed mines which are launched from the the ocean floor and you must activate your mine sweep before they explode. Quick reflexes are needed if you want to get through all 12 levels of this underwater escapade.

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OUR PRICE £3.95

ARKANOID

One of the best adaptations of all time. Take the simple but highly addictive concept of Breakout and add dozens of variations, enhancements and extras and you have one of the best computer games of all. This is highly addictive and challenging and a must for anyone who has not yet experienced the addictive nature of the world of Arkanoid.

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KNOCKOUT BOXING

Challenge for the Heavyweight Championship of the World by boxing your way past nine progressively more skilful opponents. You will need speed and skill to deliver body weakening stomach punches, points scoring head jabs or deadly upper cuts. Your must remember to keep your guard up or the referee will soon be counting you out.

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JUNO FIRST

A fast and furious space shoot 'em up translated from Konami's early arcade machine of the same name. Dozens of alien craft will attack from all sides and you must be quick to blast them away and earn your bonuses. If you feel that you are going to die then you can take the last resort and warp away through a kaleidoscope of colour. Similar to invaders, this fast shoot 'em up will appeal to any arcade game fanatic.

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TRIVIAL PURSUIT

The classic board game translated to the Atari with added question power. Now you can answer questions presented with music and graphics as well as straight text. An ideal family game or one you can play on your own. Over 3,000 questions and all the mechanics of the game taken care of by the computer. Trivia has never been so much fun and has never been available before at this price!

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PANZER GRENADIERS

In this exciting solitaire wargame you make the decisions for a regiment of the elite armoured infantry attached to the Panzer Grenadiers. Your forces also include mortar, artillery, Panzer IV, Panther and Tiger units. The Russian enemy is directed by the computer which will fiercely challenge you with its own complement of infantry, tanks and anti-tank guns. Three levels of difficulty, joystick control, hi-res graphics.

DISK ONLY

OUR PRICE £7.95

DECISION IN THE DESERT

Take command at the Battle of El Alamein. You can lead either side in this accurate simulation from the creators of F-15 Strike Eagle

CASSETTE

OUR PRICE £5.95

MIG ALLEY ACE

An aerial combat simulation set in Korea with 3D graphics, cockpit instrumentation, different skill levels and much more

DISK

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COLOSSUS CHESS 4

Claims to be the best chess program of all. The writers of Sargon III would disagree, but there is no doub this is a fine chess simulation particularly for advanced players

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MAKE A COMMITMENT

BUY SOMETHING EXTRA

BLUE MAX

Everyone must have heard of this World War Two 3-D flying game. We no longer have the ROM cartridge but this classic can be yours on disk dirt cheap!

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SUN STAR

The Sun Star is the fastest and most powerful craft ever built and you must pilot it to recover crystals from the solar grid. A slightly different game.

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WE HAVE A LIMITED NUMBER OF SCENERY DISKS IN STOCK AT £9.95 EACH - PLEASE PHONE

Limited Supply items ...

Many of the items here (though not all) are down to the last few and we doubt that we will find more stock - we suggest you phone first on these to avoid disappointment

TRAILBLAZER



A classic 3-D game in which you control your ball on an ever changing grid rushing towards you at breakneck speed. Keep an eye on the task set and try to avoid the chasms on either side. Hard to explain, but great fun to play with superb graphics, this is one of the classic games on the Atari. For 1 player or 2 players together with split screen action.

DISK ONLY **OUR PRICE £3.95**

BALLBLAZER

The year is 3097 and you are the contestant in the most competitive and by far the most popular sport in the universe. Jump immediately into head-to-head action against a friend or hone your skills against a selection of Droids. Either way, you're in for the match of the century! Excellent graphics and split screen action have made this one of the Atari classics.

DISK ONLY
OUR PRICE £3.95

PACMAN

What can you say? Surely one of the all time arcade classics that should be in everyone's collection. A game that can be played by adults and children alike with equal fascination. Very few of these ROMs are left now and your collection is not complete without this all time classic. Soon it will be gone forever.

ROM CARTRIDGE
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TOUCHDOWN FOOTBALL

Yes it's real American football on your Atari with great 3-D graphics and animation for 1 or 2 players. Choose offensive or defensive play and be ready to run hard. Don't worry if you don't know the rules, as everything is explained. Your players are controlled by the joystick which gives eight types of move depending on the type of game you are playing. It will take a while to master but when you are up and running the adrenaline will be running high!

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BARNYARD BLASTER

Get yourself a light gun and have some fun with some real down-on-the-farm target practice. There's critters, bottles and varmits everywhere in the barn, in the yard and out on the cornfield. If you can't hit the moving targets you can play havoc with the veggies. If you get hold of a light gun then Barnyard Blaster is fun all the way.

ROM CARTRIDGE
OUR PRICE JUST £5.95!

ROSEN'S BRIGADE

You have just been on a secret bombing mission when the enemy sights you and attacks from all sides. Your fellow flyers are overcome by the enemy but you, as an ace pilot, manage to escape. Now you must go back and try to rescue your men. You will face tanks, battleships, planes and choppers which you must shoot down whilst avoiding enemy fire. All the time you must keep an eye out for your comrades who will parachute down. How many can you rescue?

DISK OR CASSETTE
OUR PRICE £3.95

ZAXXON

The classic 3-dimensional flying game is back again for a limited period. Fly your aircraft over a landscape littered with enemy aircraft, fuel tanks, concealed missiles, anti-aircraft tanks and more as you fly over walls and past obstacles. If you survive the land battle you enter a breathtaking space battle against a fleet of enemy fighters. Beyond that lies the robot but few have got this far. A classic.

DISK OR CASSETTE
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VOODOO CASTLE

The Count of Monte Cristo reposes in a coffin in his musty castle awaiting an able assist from you to remove the curse that binds him to non-life. Is he down for the count for good or can you help? Gather your rabbit's foot, arcane charms and courage and be prepared to step through the portal of Voodoo Castle. A moderate level graphics adventure from Scott Adams.

DISK ONLY
OUR PRICE JUST £2.95!

PANIK!

All the excitement of a great arcade classic. Screen after screen of evil looking monsters are out to get you. You are quite strong, you can move fast and you are armed with a large shovel. But will this be enough? You must dig traps for the monsters or hit them over the head with your shovel. How long can you survive before you Panik!

CASSETTE ONLY
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SPEED RUN

Do you fancy being a rally Ace? Now's your chance. Quick reactions, skill and a bit of nerve are needed on the winding roads. You have a choice of automatic shift or if you really fancy your chances, manual gear shift. Push the car, and yourself, to the limits and beat the clock. One of the very best car games around, originally from Red Rat.

CASSETTE ONLY **OUR PRICE £2.95**

ROULETTE SIMULATOR

Why waste your money in the Casino when you can play at home with up to three friends? Now's your chance to break the bank. You must have cool nerves and a little luck to beat the odds. Place your chips skilfully, with £5,000 in the bank you can gamble for big, big money!

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KICK OFF

Recognised by many as the soccer game for the Atari, Kick Off is played on a full size, multi-directional scrolling pitch and has every skill you can think of. Practice options allow you to learn the game before tackling the skill levels from Sunday League to International. Although for one or two players, you can save the league competition with up to eight players controlling teams. Penalties, red and yellow cards, injuries, it's all here in the best football game of all.

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BOULDERDASH

VERY LIMITED SUPPLY

Yes, it's back again. Boulderdash must be one of the most famous games of all time and it's still great fun to play. Guide Rockford through the caves to collect the diamonds but avoid the falling rocks. 1 or 2 players, playable intermissions, several different caves each with 5 levels of difficulty make this award winning game one to come back to time and again.

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GAMES

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ZORK 1
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DISK **SUPER PRICE £2.95!**

US FOOTBALL
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ROM **OUR PRICE £7.95**

EASTERN FRONT (1941)
The classic war simulation by Chris Crawford that astounded Atari users when it was released. Based on Operation Barbarossa on the border of Russia.

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SUPER BREAKOUT
Breakout was the original simple yet totally addictive game and this enhanced version will provide even more addictive fun. Needs paddles.

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Winner of one of the first Atari programming competitions, this was one of the first vertical scrollers and remains much sought after - LAST FEW WITHOUT BOX BUT WITH FULL ORIGINAL MANUAL -

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One of the most famous platform games that has you running and jumping over everything in sight. A really classy game

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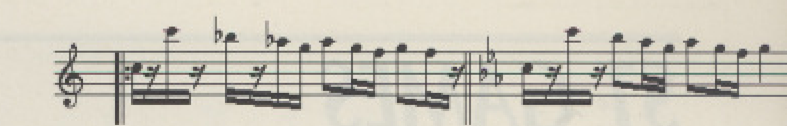
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John S Davison with some recent updates

Things are a bit quiet on the music front at present. I'm in the process of lining up reviews of a number of new music related items, but unfortunately none of these materialised in time for this issue. I do have news of updates to a couple of existing products though, both of which we've looked at in these pages in the past.

MUSICAL FRACTALS

The first is an update to Fractal Music, originally reviewed in Issue 47. For those unfamiliar with the program, it's a composition aid which uses the unlikely concept of fractal mathematics to generate a new piece of music, or transform an existing piece in all sorts of clever ways, and play the results on a MIDI synthesiser. Agreed those results aren't everyone's cup of Earl Grey, but the program is still an invaluable experimental tool for serious music students or composers.

The latest upgrade, Version 2.51, is really only a minor one, but it does correct several annoying "features" of the previous version. The first is that it now incorporates a MIDI Thru function, useful if you play separate expander modules, drum machines, and the like from a separate MIDI keyboard. You no longer have to mess around recabling your MIDI setup if you want to try out different sounds - it can now be done via menu selection and mouse clicks.

Older versions of Fractal Music suffered from the dreaded MIDI "drone" when using certain MIDI synthesisers. If you stopped the program during "fractation" (the music generation process) or while playing back an existing piece, the last notes played would continue to sound, droning on forever until you reset the synth manually. This is now taken care of automatically by the software when you tell it to stop fractating or playing.

The update costs just £5.00 to UK registered users (£7.50 if overseas). If you want more details call Datamusic on 081-985-5268.

JOIN THE BAND

The second item isn't really an update, but more of an add-on to an existing product. It's a new styles disk for Band-In-A-Box, the innovative automatic accompaniment generator from PG Music (see Issues 48 and 57 for original reviews). This program is one of the most useful music related software tools I've encountered, its purpose being to automatically generate and play rhythm backings in any musical style for any chord sequence you care to supply. It can also record and play a melody line over the backing if you wish, and the whole song can then be performed on any suitably equipped MIDI synthesiser. Instrumentation is normally for bass, piano, drums, strings, and guitar, but you can substitute your own sounds for these if required. It sounds terrific in use, producing really professional quality backing tracks you can play along to or incorporate into your own sequencer based songs.

Styles are available from three sources. You can use the pre-programmed styles supplied with Band-In-A-Box; you can build your own using the program's StyleMaker facility; or you can buy collections of ready-made styles at around £25 per disk. There are now four of these and I recently acquired number four in the series, which contains 34 styles. Most of them are completely new, but several are reworked items from previous disks. Early versions of Band-In-A-Box produced piano, bass, and drums backing only, but later versions handle five part instrumentation as mentioned above. PG Music are now updating some of the old styles to five parts and improving the arrangements too. They've now also started to substitute other instruments such as clarinet, fiddle, and banjo where it improves the arrangement.

The Jazz Styles section contains nine styles including Charleston, Dixieland, Fats Waller, Louie Prima, and Jazz Quintet, amongst others. There are eight new Country Styles including Chet (Chet Atkins "boom-chick" sound), Floyd Piano (Nashville piano sound), and Ozark (incorporating banjo and fiddle sounds!). Pop Styles are split into "old" and "new" sections, the former including Supremes, Sam Cooke, JB Goode, and Fats Domino, and the latter such titles as Breezin', St. Elmo, and Grover. Finally there's the Ethnic/Miscellaneous section, which supplies two Israeli styles (great fun, these!); a couple of marches; Gumbo (modern New Orleans); and Mozart (adding a classical flavour). Documentation supplied with the disk contains brief descriptions of the styles, suggested song titles to use with them, and recommended tempo ranges.

Unexpectedly the disk contains a fabulous bonus in the form of 61 demo songs using the new styles. These aren't just a few bars of quick demos knocked out by PG Music's programmers, but complete, well known songs including a melody track in most cases. I just couldn't leave these alone, and it took me over THREE HOURS to play them all through just once. Some are extremely compulsive - I defy anyone with any music in them to resist playing or singing along! And these are just demo's - imagine what you could do with your own songs! For details of the styles disks and Band-In-A-Box itself, call Zone Distribution on 071-738-5444.

ISHAR Legend of th

You can't possibly have missed the fact that one of the most important games to come onto the computer scene in the last five years was Dungeon Master with its first person perspective of the life and times of a band of dungeoneers. This game has spawned many others, some of them excellent and some not so excellent. Ishar - Legend of the Fortress falls into the excellent category. It takes the idea a quantum leap forward and gives you a game with over 160,000 different locations.

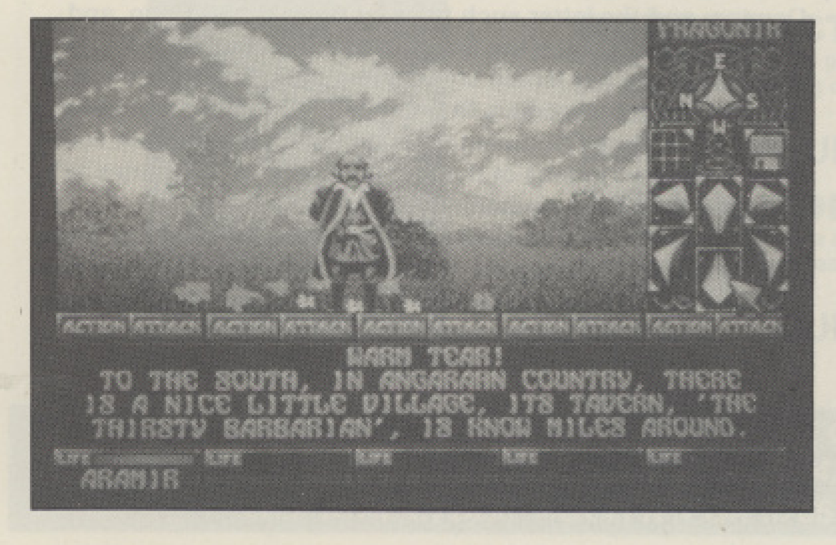
Ishar is the follow up to Crystals of Arborea and what a sequel. I haven't played Crystals but I can't wait if it's anything like this. Ishar is huge! I can't remember a game as complicated as this. This is the kind of game RPG'ers would kill their Granny for just to get their hands on it for five minutes.

Are you sitting comfortably? Then I'll begin. If you've played Crystals of Arborea you'll already know that Jarel (wasn't he in Labyrinth?), the Prince of the Elves, overthrew the evil Morgoth and became the ruler of the land now named Kendoria. Since then Jarel has died in a hushed up hunting accident and now Krogh, an evil lord, has taken the land for himself and rules from the evil fortress of Ishar. You play the role of an ordinary guy dragged into this world of troubled politics to sort it all out and restore the throne of Kendoria to righteous hands.

You begin the game in the middle of a large plain of scrubland with no idea of where you are, what to do or where to go. The only thing around is a guy by a tree in the distance who babbles on about going to a local hostelry. This may seem a little confusing but it does allow for a great deal of involvement in the plot which you soon get sucked into and you begin to think like the game. This only ever happened to me one other time when I played Gauntlet for 18 hours solid. Now after being absorbed into a game I want to recruit people!

JOIN THE GANG!

The game continues and you soon find another traveller who you recruit and she joins your group. The people that join your group all have different talents and as such interact with each other so that you get friendships and enmities formed within your own group. You must work these out so that you have a nicely rounded group. For instance when you go and recruit someone your group votes and if there's a majority then he joins, if not he doesn't so you must learn a little "people management".



People and places you meet around the land give you clues and hints in your quest. The first man to join your group tells you to visit a local pub but you may also be given missions and quests to go on from many of the locals. These will play a part in the overall game's depth which at first isn't present but once you realise that everything in this game is different doing something to one thing means you affect others. Movement in this land is via the now standard block of arrows that make you go forward, backwards, left and right as well as turning you left and right. It also shows you your current party formation and you can also save and load games previous games from here as well. Travel about and you soon find the red gateway which takes you to another section of the land. These gates are used to transport you and your group without the hard (and laborious) task of having to walk everywhere.

When you first enter this gateway you'll find yourself ambushed by a rather happy bunch of trolls who are very happy to beat seven shades of the brown stuff out of you. Now comes the time to learn how to fight and and you have to learn fast. All you need to do is continually click on the attack button of the character involved until either you or the opposition is dead. The formation that you and your party are in is the most important part of the fight and you should position those with the best weapons and armour to the front with the weak, lightly armoured, ones at the back.

GO TO TOWN

A town soon looms on the horizon after going through the gateway and you are soon amongst the towns buildings and entering the unlocked ones. The buildings can contain many things, from shops where you can buy weapons, food and ingredients for spells (which we'll come onto later), academies where you and your group members can hone your fighting, magic, lock picking and other such skills. There are also taverns were you can sleep and pick-up information about local goings on or just general title tattle. All this is provided to help you negotiate the pit falls and dangers that

f the Fortress

lurk out there in the big wide world and to complete the mystery you are here to solve.

A BIT OF MAGIC

Magic is a very important part of Ishar as sometimes it is the only way to go forward. You have to make the spells up to a recipe, or so they say, but a certain amount of experimentation comes into it as well. Some characters start off with some or no spells at their disposal which they can add to by enrolling in academies to learn more advanced and interesting magic such as enemy confusion and party vaporisation. There are 35 spells in the book but you can experiment with other mixtures of the ingredients given in the instructions. Be careful though, one false move and you'll all be croaking and taking liking to lily pads! Magic has to be aimed and it's no good being armed to the teeth if you can't hit the side of a barn at 10 feet.

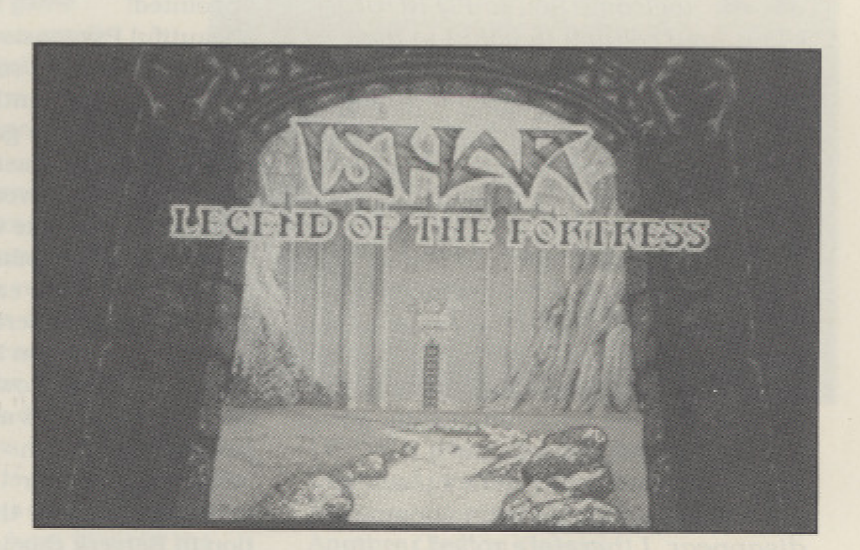
Magic is used by clicking on the character's face which activates either attack or actions. The attack is obvious but the actions allows you to use all the special actions of each character. A priestess, for instance, is better at magic than a barbarian but is more vulnerable to sharp, high speed, killing kind of instruments. This has to taken into consideration both at the academies and at the battle scenes.

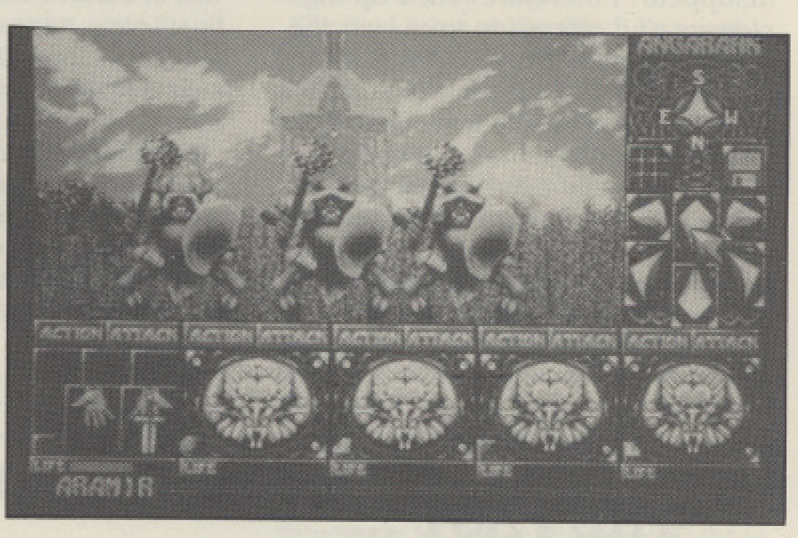
Graphics are absolutely excellent. The backgrounds are highly detailed along with the characters and scenes in the taverns and the shops. The opening screen is very nice and sets the game up well. There is nothing worse than a lame beginning to a game to put you off. The backgrounds are detailed and varied enough to keep you interested while wandering aimlessly about and they enable you to pick out objects and people easily and without wondering whether they're friend or foe. Overall a very good and successful attempt at the graphics which works a treat.

Normally games like this have very little sound apart from a roar and a grunt here and there, but this one has sampled noises all the way through it, right from the word go. You hear the crickets chirping and eagles calling far away. There are battle noises, again all sampled, during battles and the taverns are alive with the sound of noisy revellers enjoying a few jars down the local. Sampled sounds can spoil a game if they are used too much and slow the game down but not here. They tend to help you feel your way around because you feel as if you are out there.

The sheer size and complexity of Ishar will mean that you will be playing it for many moons to come. Dungeon Master started it all and this one excels as the best one yet. It has the freshness and originality to make it last by relying on a proven good idea. You'll discover more and more about Kendoria every time you play it (thank goodness for a save game feature). Solving the mystery will be your main objective but on top off that you'll have fun just wandering around exploring the land and its people.

I can't wait to review Ishar 2 some day in the future but until then I can't recommend this game enough to those of you who enjoy a good hack and slash. To those who don't but enjoy blasting things get it anyway - you'll be hooked in minutes. I was!

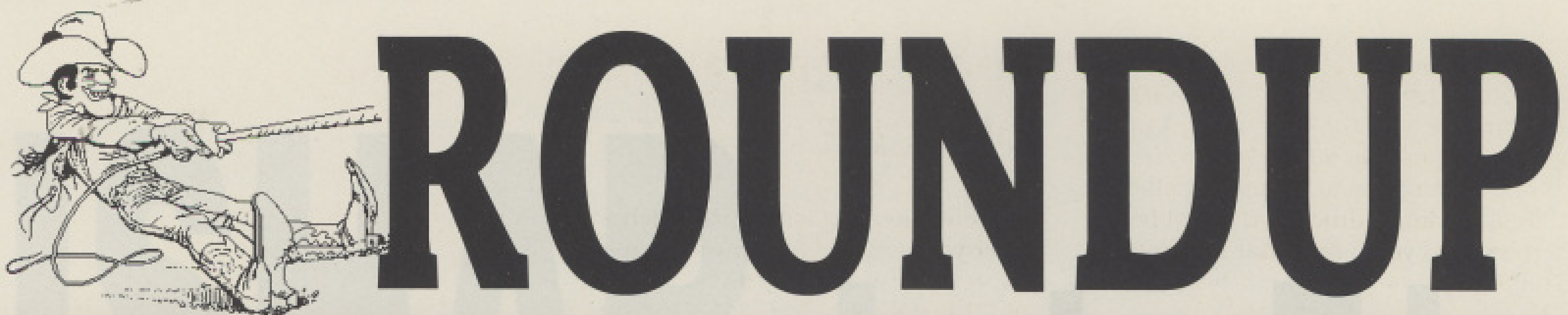




'you'll be hooked in minutes'

ISHAR - Legend of the Fortress
Silmarils
£29.99
Reviewed by Nicholas Bavington

ST PUBLIC DOMAIN



Hello. My name is Stuart J. Murray and I would like to welcome you to PD ROUND-UP; a new column devoted to the world of Atari ST public domain software. Before commencing with my first instalment I would like to thank Paul Rixon for his excellent handling of PD World over the past three and a half years.

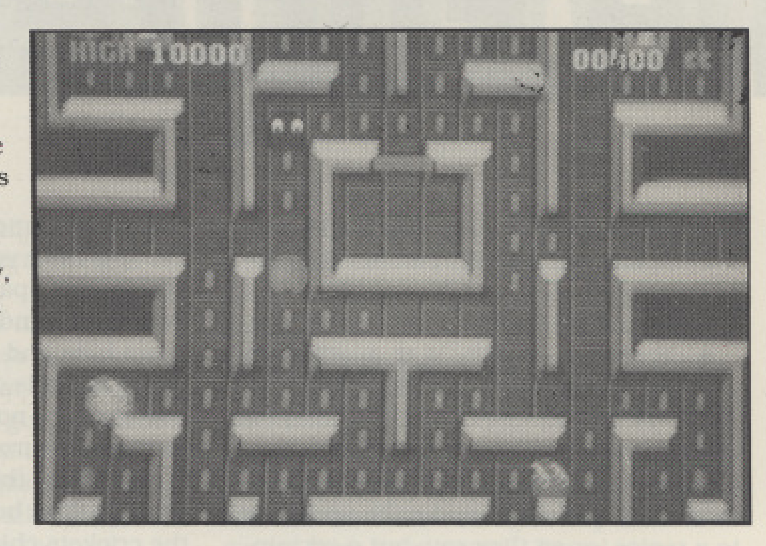
Since PD World began in issue 43 (April/May 1990) Paul has consistently given Page 6 readers an informed overview of the best in ST public domain software. When he recently told me that he was reluctantly going to stop PD World I was very disappointed because I didn't want to see the ST public domain coverage disappear. I therefore rolled up my sleeves and offered to take over the column myself. The rest, as they say, is history. Anyway, thanks Paul and keep up the good work on your 8-Bit!

As Christmas is on the horizon, I thought I would begin by looking at some PD games. With commercial releases for the ST slowing up, it may be worth your while taking a look at the ever-improving PD market. Now, pass me that joystick ...

A BLAST FROM THE PAST ...

The deep space exploration ship Darwin 8 has been invaded by hostile alien robots. As the last surviving crew member you must destroy the Positronic Generators from which the robots draw their power and then attack the robots themselves. Only when all of the robots have been destroyed will the exit open to the next level. To add to your problems the walls and barriers have been electrified.

This is the scenario of **ROBOTZ**. If you haven't guessed already, it is a clone of the classic Stern Electronics game Berzerk, which appeared as a coin-op, Atari VCS cartridge (1982 - CX2650) and Atari 8-Bit proto-type (1983 - with digitized speech). I still enjoy playing my VCS copy of Berzerk and so it was with great anticipation that I booted Robotz. I was not disappointed!



Beautiful Psygnosis-type graphics, sampled sounds and, most importantly, the same addictive gameplay as Berzerk. Basically, Robotz is a glossy version of Berzerk complete with the original playability. I found the controls easier than those in Berzerk. However, the action in Robotz is a little slower because the robots move in turn rather than advancing together (although going by the speed of the action in Berzerk this is no bad thing). On later levels, it is just as much a challenge to squeeze through the walls and barriers as it is to destroy the robots and generators.

Robotz has expanded upon the element of strategy in Berzerk by having to first track down the generators. Whilst doing this you can only stun the alien robots. The only thing that's missing is Evil Otto. Superb!

ANOTHER BLAST BUT NO BLAST ...

Another blast from the past which remains one of my favourite games is Pac-Man. There aren't many commercial versions of Pac-Man for your ST (Pacmania is probably the closest to the original) but the public domain is full of quality versions. Ones to look out for include PAC-MAN ST, HACMAN II, EVASION 2 and the Ms Pac-Man clone MRS MUNCHIE.

My favourite PD version of Pac-Man would have to be **PACMAN ST**. It is the closest implementation of the original coin-op. The gameplay is very smooth and scrolls over two screens. If you wish, you can change the classic background graphics to a Modern setting (a blue/purple screen of tiles and 3D walls). However, it's not a patch on the Classic setting! You can also alter the speed of the gameplay from Normal to Hectic. Be warned! Hectic is hectic!

After completing every second screen there are Pac-Man cartoons. A nice touch which adds to the overall feeling of the game. Great fun!

P-P-P-PICK UP A ...

Some of you may remember a small games company called B.Ware Software which used to advertise in the pages of this magazine. Well, they sold a full-price game called **PENGUIN** which is now available as shareware (with a registration fee of only #5). If you fancy a break from non-stop arcade action, Penguin may be of interest to you.

If my memory serves me right, B.Ware's Penguin was released before the now infamous Lemmings. Anyway, whichever of the two came first was an influence on the second. Hmm. It's always complicated when a game like Lemmings becomes so popular. Any successor (or predecessor) becomes a "Lemmings clone". So, put simply, Penguin is similar to Lemmings (grin).

After a nice title screen featuring some cute penguins, you are met by the shareware message and some very bouncy music (which you can toggle on or off). Next, is the menu screen: I suggest you begin by decreasing the number of penguins from four to one. One penguin is hard enough to begin with!

The game itself involves moving various arrows, bridges and objects around the

screen to shepherd your penguins from Start to Finish. There are twenty screens to complete with the option of 1-4 penguins on each (i.e. 80 levels).

I found Penguins to be more challenging than Lemmings. Just try the first few screens and you'll see what I mean! Thankfully, you can pause the game with F1.

Although Penguin can't match the overall 'feel' of Lemmings (and what can?) it is a good alternative with enough puzzle-solving to keep you occupied through long winter nights. A challenging game for puzzlers and Lemmings freaks!

SKILL OR LUCK ...

IN THE CASINO features four games on one disk. First up is a quality puzzle game called FLIPPED. It is a tile game in which you must flip coloured tiles to produce a single colour board. There are 100 levels and on each you must use different grid shapes to flip the tiles. Sampled sounds add to the fun. I found Flipped surprisingly addictive.

Next up is the star of In The Casino. POKER DICE is the best computer dice game I have seen! Right from the start it oozes quality with the title screen flying at you in the shape of 3D dice. There are also some excellent digitized sound effects. Poker Dice plays just like normal poker but instead of being dealt cards you roll dice. The six faces represent 9, 10, J, Q, K and A.

This game is fast and friendly to use and VERY addictive. I found myself trying to beat the computer well into the small hours (the computer plays intelligently). Poker Dice is a wonderful example of the power of STOS Basic.

Next up on the disk is ROULETTE V1.5 by Ralph B. Davis. This is a simple Roulette game with virtually no character whatsoever. The only point worth noting about this game is the addition of a cheat mode. If you press the right mouse-button the number 7 will come up. Each successive press returns a multiple of 7. Not very honourable but good fun for frustrating your opponent! Pity about the game itself.

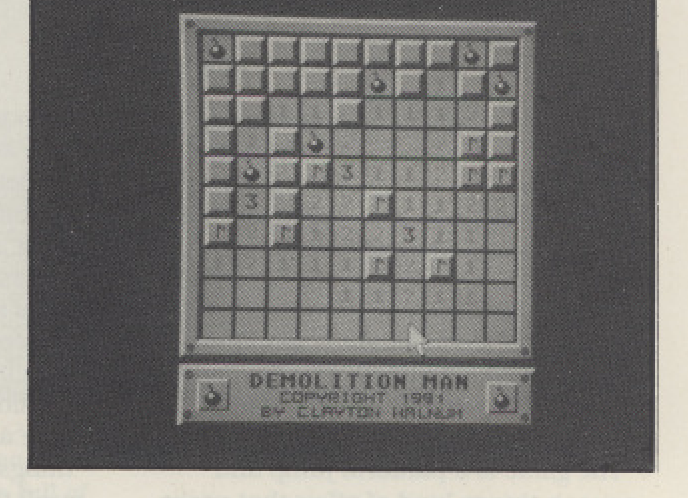
The final program on In The Casino is COMPUTER YAHTZEE. This is a standard version of yahtzee with the addition of some poorly animated dice. However, I did like the option of printing score cards - very handy for other versions of this popular game.

Overall, In The Casino offers you an outstanding dice game, a quality puzzle game and two average sector fillers. Good value for money! It's worth it for Poker Dice alone!

FOR THOSE LONG WINTER NIGHTS ...

If you're looking for a disk which will offer you hours of fun throughout the winter months I suggest you take a look at **SNOWBALL FUN**. There are four games on the disk: Block 3D, Boing, Demolition Man and Snowball Fight.

BLOCK 3D is a good version of the mono classic 3D-Tetris. However, you'd be excused for not noticing this game because it begins as a small graphics demo. Only by accessing the options above does the game appear. I like this kind of touch!



In Block 3D, you must manoeuvre three-dimensional shapes from an overhead position into a vertical tunnel. The graphics are very colourful with each completed level of the tunnel represented by a different colour. Sound is virtually non-existent. The gameplay is controlled via the keyboard and takes a while to get used to as you must use 15 keys to move the shapes about. A challenging game for all fans of Tetris.

BOING is a commercial-quality platform game which can only be described as a cross between Bomb Jack and Rubber Ball. You must bounce around the screen and collect fruit to access the exit. There is a time limit on each level in the form of a rising temperature. There are bonus levels in which you can gain extra lives or scores.

However, everything is not as easy as it seems after you've completed the first level. Joining the action from here on are poisonous mushrooms, disappearing platforms, indestructible walls, etc. Good fun!

DEMOLITION MAN was written by the infamous 8-Bit author Clayton Walnum. It is a version of Minesweeper. The gameplay centres around the search for hidden bombs within a large grid of tiles. You are given clues to the whereabouts of these bombs by uncovering numbers which represent the amount of bombs in the surrounding area. It's actually quite addictive if you give it a chance. However, I HATE it when you only have a few tiles to go and you uncover a bomb ... Kaboom! I guess I'm just a bad loser. Another Clayton classic!

The final game on Snowball Fun and indeed for this column is SNOWBALL FIGHT. This is a 2-player game in which both players must throw snowballs at each other in order to reduce the opponents energy level. You must battle with the wind and use the appropriate sized snowballs.

This is a 16-Bit version of the classic Atari 8-Bit PD title of the same name. Snowball Fight on the 8-Bit is one of my favourite 2-player games of all time. The ST version has the same gameplay but with enhanced graphics and the addition of sampled sounds ("Aghh", "Ouch", "That hurt", etc.). If you like 2-player games you MUST add Snowball Fight to your software collection!

ROUNDUP RATINGS

Robotz	*94%*
Snowball Fun	*91%*
Pacman ST	*88%*
In The Casino	*86%*
Penguin	*83%*

The disks featured in this review are all available from the Page 6 ST Library. Check the latest ST Updates or phone 0785 213928 for further details

ROUNDUP conducted by Stuart Murray

CREEPY, KOOKY, OOKY, SPOOKY

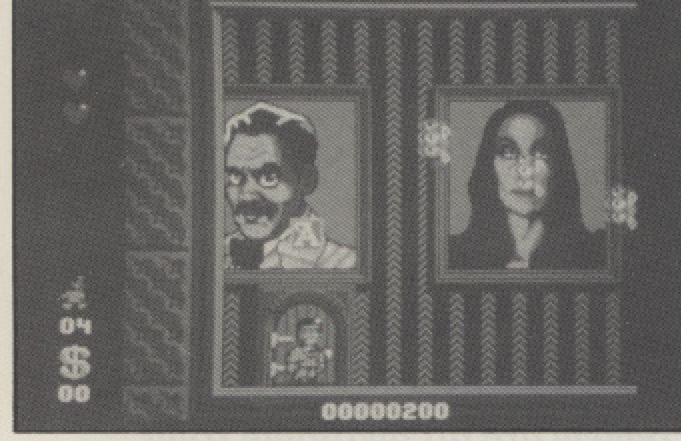
it's The Addams Family

You've seen the TV series and the film, now play the computer game. Yes, the Addams have come to the ST and they're in a bit of pickle. Your job is to guide Gomez around chez Addams to find Morticia, Pugsley, Granny, Wednesday and Fester's stolen memories that have been abducted by the evil Abigail Craven and (as always!) you are the only one left to save them.

The game is a platform jump and squash things kind of affair that poses more than the usual amount of trouble to the player. The action is based around the whole Addams estate, the mansion, the grounds, crypt and the inside of the house itself. The playing area is a huge affair that scrolls in four directions. The scrolling does tend to be abrupt so you soon find yourself hitting some monster or other that flashes before you as the screen snaps from one side to the other. This might at first might seem a little disconcerting as you die pretty quickly once you start but with a couple of minutes practice you soon learn the positions and patterns of the monsters.

The game comes sprinkled with an number of useful objects that help you reach your kin folk such as extra hearts that let you take up to 5 hits before dying, invincibility shields, speed-up shoes and a bizarre Fezi-copter for that extra little pick-me-up. Along the way there are also other "things" (excuse the pun!) that prove helpful such as Thing boxes that give advice and secret doors and rooms hidden in the walls and scenery that are full of nice stuff.

Progression through the game has you battling your way through the different levels picking up the powerups and battling the end of level of baddies without which a game such as this wouldn't be complete. Once you have the members of your family they'll join Lurch in the Music Room and help him complete his tune and open the secret door to the Evil Abigail Craven. For every member of your family you rescue you'll be given a password that will enable you to start off again at the same place with the same amount of energy the next time you play.



Title:	**THE ADDAMS FAMILY**
Publisher:	**The Hit Squad**
Price:	**£9.99**
Reviewer:	**Nicholas Bavington**

Once you die you have the choice of continuing or quitting. Continuing will take you back to the main staircase in which you have the doors to different rooms around the mansion. Quitting will take you back to the title screen. You may continue as many times as you like but you always start off back at the main staircase. During the game restart points are many and often.

The graphics are above average and are cutesy in a comically horrific way. All the film's comic humour is there with Gomez and the rest of the family all well animated which adds to the game's pleasure. The backdrops are also well defined and hide many secrets (if you look for them). The sound is, as always with Ocean, one of the let downs. It is one of their usually hurried affairs that seems to have been left to fend for itself in the race to get the game out in time for the film's release last summer. It consists of the now characteristic blipping and white noise crashes as the main game of the Addams theme tune plays incessantly. Not a MC Hammer sampled tune within earshot!

Playability is, all things said and done, very good on this game and will have you coming back for more time and time again. The response of the characters is good although sometimes the background's response isn't too hot. The inclusion of passwords, powerups and infinite continues keeps you hooked as you go back to get that mad knife wielding chef in the kitchen and the fire monster in the furnace just once more. Lastability will probably be in the region of about a month or two as you try to get that bit further with your latest password. The repetitiveness of the levels with no random elements to them may after a while prove too tedious for the hardened game player but I don't believe it detracts from the lastability at all.

All in all this is a very good game that I would thoroughly recommend to anyone looking for a game to play on the long winter nights ahead. The price is right, the playability and lastability will see you until bedtime and probably, if you get hooked, into the small hours but I wouldn't over the top like that, now would I?

NICKY 2

Even though Nicky rescued his grandfather from the wicked witch in Nicky 1, the witch is back (I've heard something like that before!)

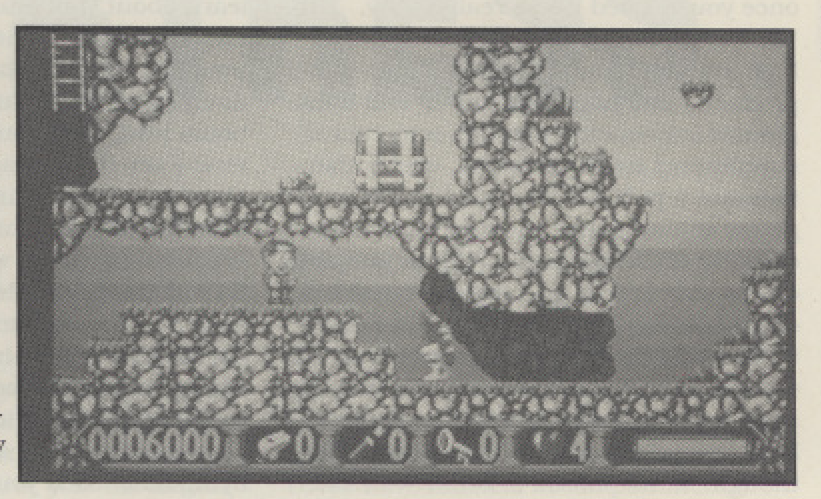
An evil cloud (what does one of them look like?) hangs over the forest and Nicky sets out to find out who's behind the cloud, the monsters in the forest and more importantly who's stolen his toys.

He's not alone in his quest for truth and toys. His grandfather has given him a magic goose of Ostrich size proportions that can carry Nicky around, but it can wander off if not properly looked after.

The title screen in Nicky 2 has a very nice bouncy sample track that sets the trend for the game. The screen is nicely drawn with more than the usual 16 colours on screen at once. After passing the title screen and the password protection it's onto the game proper and 6 levels of cutesy platform action that scrolls in four direction and has plenty of colours.

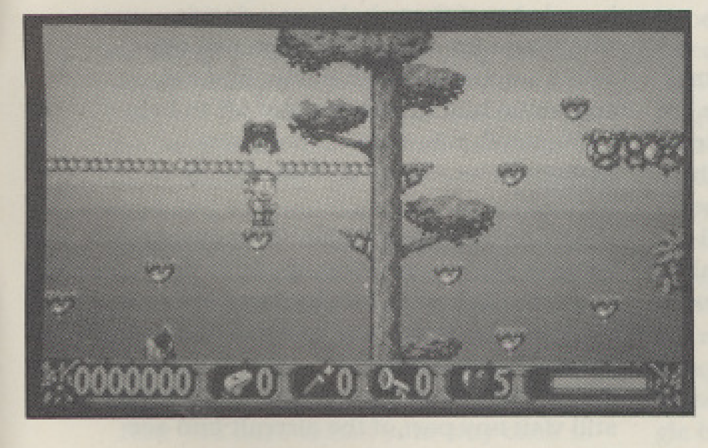
Nicky has a limited amount of energy which he loses a small amount of each time he receives blows or hurts himself on obstacles and he dies when he loses all of it. Different objects can be picked up to aid him on his quest, firecrackers to blow up restricting rocks, ultra sound whistles, which are the equivalent of smart bombs and destroy all the monsters on the screen, release bonuses and magic ladders and keys to open up the locked doors.

No game nowadays would be complete without its own complement of powerups and Nicky 2 is no exception. Fruit increases monster killing fire power, logs are used for projectiles and building bridges, armour for invulnerability, medicine chests for energy replenishments, springs and feathers make you jump and fall further, magic mirrors transport Nicky to caverns full of treasure or monsters. You won't know until you get there and then it's either enjoy or panic! Last, but not least, the goose hides in a glass egg and can be ridden quite freely once freed.



There are hidden passages and ladders that have to be discovered if the game is to be completed. The passageways are covered in destroyable bricks and ladders by jumping up to the ceiling or walking over them. If you can't find the EXIT from the level you need to find a secret passage. Once you are out of the level you are given a password so that you can continue from the start of that level.

A nice feature of the game is the fact that you can use keys for control as well as the joystick which useful if you want accurate movements or you are a left over from the Spectrum era!



Graphics are cute, animated, smooth and responsive. The sky in the background is a rainbow effect affair along the lines of Turrican and Enchanted Lands which scrolls nicely and doesn't interfere with the game's background which is well drawn and accurate when it comes to making the rocks look like rocks and the grass like grass. There are over 40 enemies which are well drawn and vary from wasps to walking mushrooms and winged devils to ghosts. The animation is good and well suited to this cutesy.

Sound is better than average thanks to a sampled title screen tune that raises your expectations, but this is short lived when you start playing the game. The sound during the game consists of sampled spot effects which, although good, could have been supported by some chip music. It has been the thing recently that the Continent has been providing superb games with excellent sound and graphics, Ishar I & II and Transantarctica to name but two, but this one from France make little use at all of the sound potential of the machine and modern sound programming techniques.

> **"not too hard to play, but hard to master"**

Playability is very good and has you hooked because it isn't too hard to play but hard to master. The goose allows for a more arcady game and the overall game play is very pleasing and satisfying. This should keep any type of gamer satisfied.

Nicky 2 has the ability to last and last by the use of the passwords and the cutesy style of play makes it endearing so you want to come back for more. The secret passages and ladders mean that there is plenty to keep you coming back.

The last word on the game is that not having played Nicky 1 I can't say how good it is in comparison but it is one to watch and if you like this sort of thing then I suggest that you go out and get this one as it's very good, if lacking in the sound department. Nice game overall but not one to go ape over.

Title:	**NICKY 2**
Publisher:	**Microids**
Price:	**£25.99**
Reviewer:	**Nicholas Bavington**

B17 F

I've lost count of the number of flight simulators I've used over the years, but I think this is the first World War II bomber simulator I've met. Microprose say the term "crew simulator" is more appropriate than "flight simulator" to describe B17 Flying Fortress - and once you've used it you realise why.

B17 is packaged to Microprose's usual high standard, and contains a beautifully produced 230 page instruction and background information manual; a technical supplement for the Atari ST, which also includes a pull-out keyboard guide; a glossy colour poster showing a cutaway drawing of the Boeing B17G, the subject of this simulation; and two double sided disks holding the software. It runs on 512K ST(E)'s and up using keyboard/ mouse control (joystick optional), and supports two floppy disk drives if you have them. It won't run from a hard disk though.

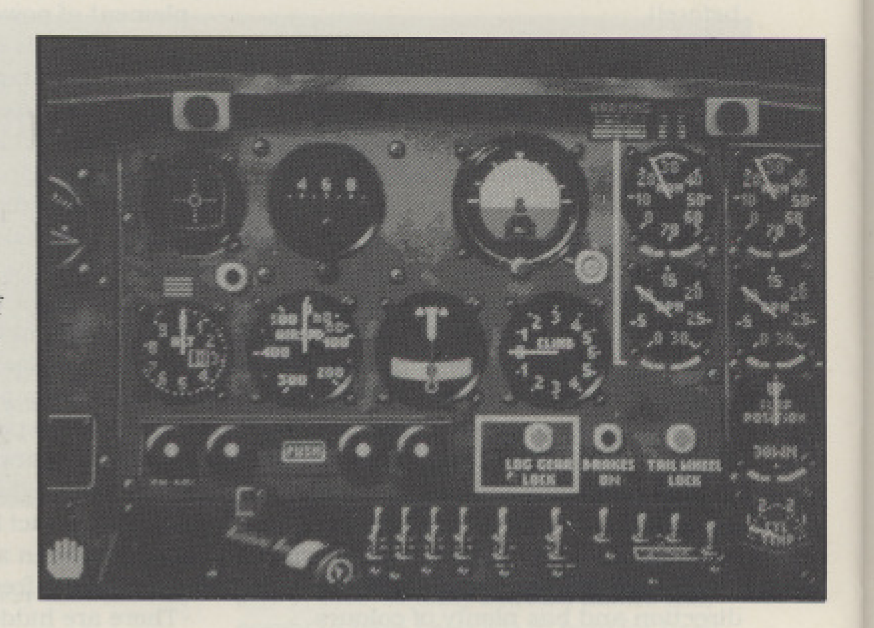
Before trying out B17 I decided to get into the right mood by watching the video of Memphis Belle. This, if you haven't seen it, is the story of the first American B17 crew to complete their 25 mission tour of duty, and it complements Microprose's B17 perfectly. In the simulation you have to emulate Memphis Belle's crew, but surviving 25 missions takes some doing. You're the commander, so you make all the decisions affecting your crew's survival chances. The longer they survive the more skilled they get, as they gain in experience. If the crew performs a mission well you can recommend individuals for promotions and medals (or even yourself if you think you deserve it!).

SCANTY CLADDING

The program autoboots into a well produced title and credits sequence using some excellent graphics - one screen shows the scantily clad young lady from the packaging, who winks at you in a VERY friendly manner, and another a view of a B17 in the early morning light. The musical accompaniment is another matter, as for me its burbling arcade-game style is completely at odds with those evocative graphics.

You then choose one of six available B17's to fly, name it, and add suitable "nose art". For the uninitiated, this is the lurid (and sometimes lewd) artwork American bomber crews painted on the nose of their aircraft to add a personalised touch. Your aircraft is then displayed complete with its new mildly pornographic nasal cosmetics, and may be saved away on disk for future use. After each mission the paintwork gets updated with symbols reflecting missions completed and enemy aircraft shot down.

It's wise to train with your crew before you start real missions. First stop is the briefing room to learn about your training targets, take-off time, time and height at target, navigation routes, and bomb load. Next you can view a scrollable map showing routes to and from the targets. This actually covers the whole B17 operational area - from Scarborough in the north to Lausanne in the south, and Penzance in the west to Prague in the east - representing a lot of flying time when you realise the B17 only cruises at about 200 knots. Ground detail shown includes main towns, roads, railways, rivers, coastlines, and airfields. Then you can view short reconnaissance films of the targets to help you recognise them from the air, which probably isn't historically correct as still photos were normally used - but let's not quibble. Finally, before starting the mission you can tweak various simulation parameters to adjust the difficulty level to match your current skills.



You're then placed in the B17 pilot's seat, with a view forward through the cockpit window. To see the instrument panel you have to switch screens, which is a bit of a pain. But what a panel! Realism rules, so there's none of the Mickey Mouse instrumentation seen in some flight simulators. It covers three screens, but the main instruments are in the middle so you don't have too much screen switching to do. B17 has all the usual viewing facilities, namely the all-around view from the cockpit, external aircraft views, chase plane view, and so on.

DON'T WANT TO BE A PILOT?

Now for B17's big plus feature. You can move from the cockpit to any other crew position and .... take over the crewman's job! You're not just the pilot, you can do any job you like, flying as pilot, co-pilot, navigator, bombardier (aka bomb-aimer), radio operator, flight engineer, or any of the four gunners.

As you're the aircraft commander you can also move crewmen around from one job to another. This is especially useful if someone gets wounded and it's essential their job is still done - the bombardier, for instance. Each crewman has unique strengths and weaknesses and your knowledge of these helps you decide who's best for a given job. You can also select someone to administer first aid and move him round the aircraft to help the injured, who may then recover enough to be able to do their job as normal.

You don't necessarily HAVE to do anything at all on a mission. If you just observe, each man's task (even yours, as pilot) will be performed by the computer, although you won't get much credit for this at the end of the mission. You can still visit any part of the aircraft and see the action through the eyes of the crewman stationed there. There's even a "film director" mode which automatically takes you wherever the most exciting action is. You can take over the action any time you like - and if things get too hot you can switch back to computer control and (hopefully) let it sort out the mess you've made!

FLYING FORTRESS

FORMATION FLYING

Getting back to the training mission - your B17 is based at Alconbury airfield (home territory for me - it's only a few miles from where I live!). The first task is to start the B17's engines and taxi out to the runway. The other two aircraft in your flight are taxying ahead of you so be careful. It's easy to run into them with dire, albeit spectacular, consequences. Once they've taken off you can do likewise, but then comes a really tricky manoeuvre - joining the other two in close formation before setting course for your target. Again, it's all too easy to collide with the other aircraft so skill is needed here.

Then it's a case of navigating via several waypoints to the bomb run. On the way the navigator regularly updates your current position on his map (which you can view), but he sometimes gets it wrong and you end up lost. To find your way again you have to obtain a visual position fix from ground details, which isn't as easy as it sounds. Fail and you'll never find the target.

There are two training targets - a bombing range on the Isle of Sheppey and a target convoy in the Thames estuary. Once on the bomb run you can take over the bombardier's job, which involves correctly identifying the target and operating the B17's famous Norden bombsight. When used correctly this steers the plane accurately towards the target and tells you when to release the bombs. You can watch them drop from the plane and, if you've done your job well, see them explode on target.

Now you have to find your way back to Alconbury again and land in one piece. The former isn't too difficult, but the latter ..... ??!! On arriving over the airfield the formation will circle, and after obtaining landing permission you can land. This is the most difficult thing you'll have to learn - as usual I produced a whole junkyard full of bent B17's before I got the hang of it!

LONG FLIGHTS

There's no enemy opposition on these training missions, so you'll have to do an operational mission to get some shooting practice. These missions range all over Europe, from "milk runs" just across the Channel to hair-raising escapades deep inside Germany. Targets include docks, factories, V1/V2 sites, U-boat bases, and even the SS headquarters in Berlin. Some take several flying hours to reach, so to relieve possible boredom when there's not much happening you can accelerate time or even skip parts of the flight.

Once over mainland Europe you can expect trouble from enemy fighters, who attack you mercilessly. Time to man those guns, and if you hit a fighter it spins down towing a huge banner of thick smoke behind it - and often you see the pilot parachute to safety. If the fighters don't get you, then the flak gunners probably will. The programmers have done a great job on the exploding flak effects. It looks most realistic, and doesn't half do some damage! You need to be ready to deal with engine fires, interior fires, jammed bomb doors, jammed gun turrets, and injured crewmen. Engine fires are fearsome - flames erupt from the engine nacelle and thick black smoke streams out behind the aircraft. They can be dealt with remotely - no need for heroics like climbing out on the wing with a fire extinguisher - but if the remote system fails you're in deep trouble as the aircraft could end up losing a wing.

A seriously damaged aircraft can struggle back home, but be prepared to give the order to bail out if necessary. Your crew may stand a better chance of survival than in a sea ditching or crash landing. On one flight I lost three engines and barely scraped back to the English coast whereupon the last engine promptly packed up. We all bailed out and everyone survived. You can watch the crew leaving the aircraft and their parachutes opening - yet another of B17's neat detail touches.

Whatever the mission's outcome there are excellent graphics screens illustrating it, whether you've ditched, crash landed, parachuted down, been captured by the enemy, or "bought the farm". These have musical accompaniments too, but here the music seems much more appropriate than earlier. Then following any promotion and medal awards and possible change of crew members, you can save the status of your aircraft and crew on disk for use in later missions.

Criticisms? Well, nothing's perfect is it, and B17's main weakness is its sound. I've already griped about the music, but also some of the sound effects are poorly handled. For instance the engine sound isn't very realistic, and never varies in pitch, intensity, or timbre, whatever the throttle setting. Another small niggle is that the screen update is a bit slow, making the furious air combat action rather jerky at times.

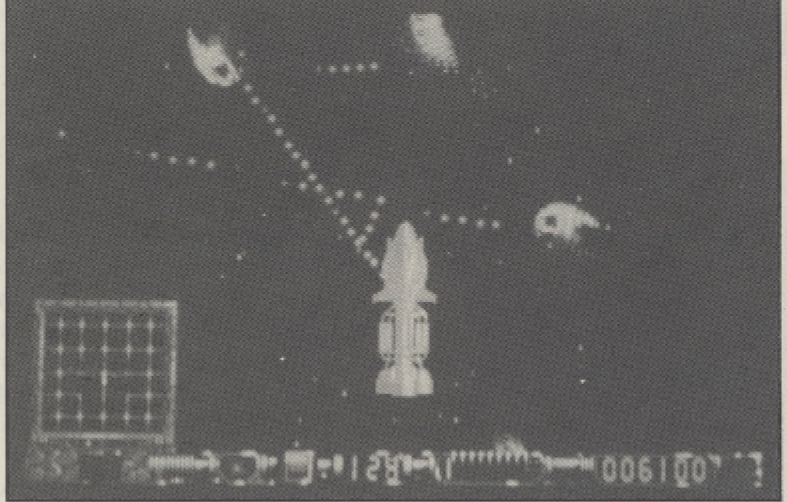
Microprose are right - B17 Flying Fortress isn't just a flight simulator. True, its flight simulation aspects ARE excellent, but being able to perform any crew function adds a whole new dimension, ensuring you stay fully absorbed for hours on end. On several occasions I've suddenly discovered it's past 1:00am and I've been totally immersed in the action for about six hours! There aren't many programs around that can hold my attention that long these days! B17 is undeniably one of Microprose's best products to date, so if you're into simulations you'll enjoy this one. Guaranteed.

B17 FLYING FORTRESS
Microprose
£34.95
Reviewed by John S Davison

AWESOME

(and I meanAWESOME!!!)

A long, long time ago in a galaxy just around the corner there was a trading ship that was heading home. The crew was getting restless so the captain was helped to make "the right decision" to take some R&R on the nearby star system of Octarian by the knife in his guts. Things began to calm down as they approached said star system but plans for the destruction of the system were overheard on the radio and there is only a short amount of time to make it out of the system before it is made into interstellar dust. Before this happens you intend to make enough money to buy the fuel necessary to get you out of the Octarian system and have some fun!



This is the premise of the game Awesome which is done by the same people who did Shadow of the Beast I & II and Ballistix and it shows right from the word go. The intro is top notch and although silent is very atmospheric and gets you in the mood for the game proper. The game is in fact a cross between the classic game of Asteroids and Elite. It has you battling the foe in a revolving fashion like Asteroids and avoiding their bullets and collecting the money discs that appear when they explode. In between the space section you'll find yourself in a weapon selection screen, where you can select which weapons to use. Then it's on again to the next level which could be asteroids or more aliens. Once through these it's a quick fight to the death with a space dragon in Space Harrier style with it coming out of the screen at you.

Next it's on to the planet where you have to shoot more aliens (where do they find all of them?) from above to enable you to land, and then its a manic overhead race through alien infested corridors in search of the planet station entrance. This is where the strategic game begins.

The space stations enable you to sell your cargo for the fuel necessary to get you about in the Octarian system and to collect weapons and fuel to battle your way out of the system. First thing to do is to accept a contract, if there are any, to decide where you have to go and sell your cargo. Once you've got this you can then sell some or all of your money discs and crystals to subsidise the stay in the planet's hotels until a window is available for the journey to your destination. Weapons are available but tend to be expensive, but they are not needed for the first few levels. The decision on how much to spend on the weapons and how much to sell will affect where you can go, you may not have enough fuel to get to your destination or enough money for the hotel bill while waiting for your launch window so that you will have to abort the game and start over again. If you do have enough money to get to your destination you warp there and begin over again going through each of the levels as before but this time the graphics are different and have their own personalities.

The graphics for each of the eight worlds in the system are different and are, as with all Psygnosis games, absolutely brilliant. In my opinion are the best by any games company apart from the Bitmap Brothers. They are atmospheric, detailed, smooth and beautifully animated and make the game worthwhile. The planet station graphics range from a dull and moody interior to a bright and highly detailed system chart with animated orbits. The aliens are many and varied and make it satisfying to blow them to hell. What else is better on a wet Sunday afternoon?

Psygnosis makes a special point of getting a game as polished as possible in all departments which is what we have come to expect from them. Sound is no exception and it makes a very nice accompaniment to the devastation. It is of the normal soundchip variety during the game but has that Mad Max feeling from those megademos in the Public Domain. There are lots of thumpy bass drums and snappy snares and bouncing melodies that soon have you listening to them unlike other games which have them to fill the disk and keep the sound chip occupied. For example when you get to the asteroids level you hear the famous thump, thump of the original that suddenly turns into a kicking tune. A nice soundtracker tune plays at the end of game sequence, as you kneel, broken on the surface of a far off planet. The sound is a real bonus in this game rather than an also ran.

Playability is absolutely excellent and with the mix of arcade and strategic games in the one package. This, I believe, will appeal to just about all gamers and give them a well above average game. The Elapidae handles very well and the little touches such as the glowing fragments when the scout ship separates give it that extra touch. The aliens are many and as yet I haven't seen all of them, even after two days playing. They react well to your craft and the level of planning that is required to enable you get from planet to planet with enough fuel will have you coming back time after time to take the other contract to the other planet.

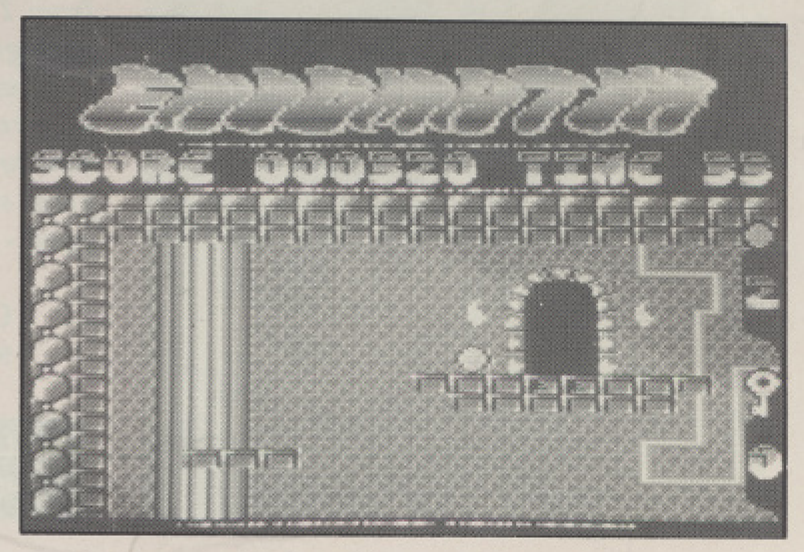
This is a game that I can see going for many weeks perhaps months. It will keep you going even after the first completion, the curiosity of taking another path through the game should keep you coming back for more. It does me and I haven't completed it yet.

This game has all of the hallmarks of quality and at its new low price is incredible value for money. This is a game that is definitely worth £25 - £30 of anyone's money and now that it's less than 13 quid you have no excuse whatsoever to buy it and see what I am so excited about.

Title:	**AWESOME**
Publisher:	**Psygnosis (STORM)**
Price:	**£12.99**
Reviewer:	**Nicholas Bavington**

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ENIGMATIX!



A superb new arcade game which will prove a challenge to even the most seasoned player. Control the bounce of a ball to jump onto various platforms and find the exit, picking up points on the way. Sounds easy? What if some of the blocks disappear after the first bounce? What if some of the blocks are uni-directional bouncing you back the way you came? What if some blocks have to be used as lifts to reach inaccessible areas? Add to all that reverse control on some screens and 32 levels of increasing difficulty and you have a game that will challenge you to the limit. If you do manage to beat all 32 levels then the fun only just begins for there is a level editor to enable you to create whole new games of your own.

- ★ ***Smooth horizontal and vertical scrolling***
- ★ ***Excellent music***
- ★ ***One or two players***
- ★ ***Access to any level already completed after every 4 levels***
- ★ ***Level editor to design your own games***

DISK ONLY   Price £6.95

EXCLUSIVELY FROM PAGE 6

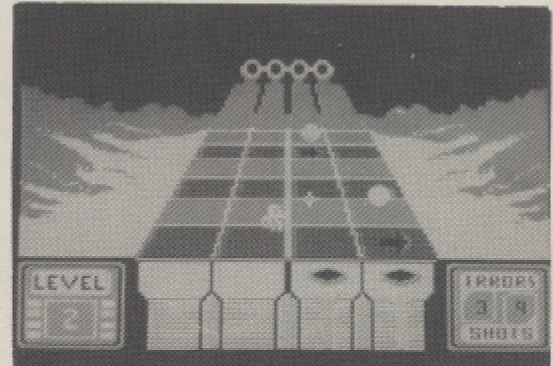
A BRAND NEW BRITISH GAME OF THE HIGHEST QUALITY

PAGE 6 is proud to be able to bring you these two superb new releases for the XL/XE. There are still a number of programs being released for the XL/XE but we have always been extremely selective so you can be sure that new programs from PAGE 6 are of the highest standard. ENIGMATIX is the first major program from a British programmer for some time and we are proud to make it available.

To order these products use the order form enclosed with this issue or telephone your order to us on 0785 213928. We accept Visa, MasterCard and Switch

A BRAND NEW XL/XE ROM CARTRIDGE!
EXCLUSIVE TO PAGE 6!

HYPNOTIC LAND



Yes, believe it or not, we have tracked down a brand new ROM CARTRIDGE for the XL/XE from Lindasoft in Italy who have produced this in conjunction with Atari Italy.

HYPNOTIC LAND is a version of the massive ST hit KLAX - a highly addictive, highly entertaining game that will challenge you to complete the first few levels and have you coming back for more - again and again!

The aim in HYPNOTIC LAND is to redirect mineral elements in the form of coloured balls into the corresponding coloured cup at the end of a ramp. To do this you must place arrows on the ramp to redirect a ball into an adjacent column. Remember to only put green balls into the green cup and so on. It seems easy but once you have mastered the first level, some despicable monsters start to appear to try and steal the balls. You can shoot them with the joystick but don't forget you also have to keep one eye on the ramp! Sometimes special shining extra-balls will appear which can go in any cup and give bonus points.

HYPNOTIC LAND requires skill, concentration and quick reflexes. Can you manage it?

Like all the great classics a simple concept that has provided the foundation for a stunning and addictive computer game

HYPNOTIC LAND is on ROM CARTRIDGE and will run on all XL/XE machines

A BRAND NEW ROM for £12.95



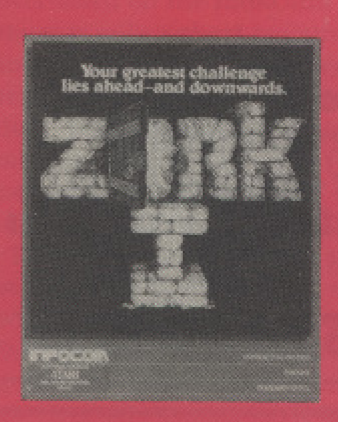
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Yes, a ROM CARTRIDGE absolutely free if you order software from The Accessory Shop that comes to £15 or more (excluding postage). Designer's Pencil is a graphics and sound based programming language that anybody can use to create great pictures and sound on the Atari - even if you haven't got a clue how to program in Basic! It could give you hours of fun and a great sense of achievement when you create something really good - and it won't cost you a penny!

Claim your free copy of DESIGNER'S PENCIL when you spend £15 or more on your next order

FULL DETAILS OF THE OFFERS AVAILABLE FROM THE ACCESSORY SHOP AND AN ORDER FORM ARE INCLUDED WITH EVERY ISSUE



ZORK I **DISK ONLY**

The Infocom classic and the adventure game that changed the way all future adventures were written. The Great Underground Empire of Zork is well documented by now and thousands of players have become addicts graduating to Infocom's more difficult adventures. Zork I is the ideal introductory level adventure for beginners or those with a little experience. If you have never ventured underground before now is the time to try, it's never been cheaper to expand your universe! Classic original Infocom packaging with excellent manual and a map.

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TRIVIAL PURSUIT

The most famous board game of all time on your Atari! Trivial Pursuit on your Atari takes on a new dimension - not only are there questions to answer but graphical puzzles to solve and tunes to guess, sometimes played backwards! Over 3,000 questions makes Trivial Pursuit the ultimate quiz experience for family and friends

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THE TAIL OF BETA LYRAE

Our A-Z of software says "The ultimate Scramble clone with superb graphics and music. This humdinger of a horizontally scrolling shoot 'em up was written by Phillip Price with music by Gary Gilbertson. They later went on to write the Alternate Reality games". One of the few original classics, right up there with the top arcade games of all time. Give you eyes, your ears and your reactions an unforgettable treat!

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ON CASSETTE ONLY 95p!

CHECK OUT THE ACCESSORY SHOP PAGES FOR MANY MORE BARGAINS!

SUPER SPECIALS

MAXWELLS DEMON

Check out the review in Issue 49. Paul Rixon found this simple game to be quite addictive and at this price can you afford not to become addicted! It's a different type of game, more in the Tetris mould than an arcade game. It sure makes you think and the price won't break you if you don't get fully hooked.

DISK ONLY *Recommended price £9.95*

SUPER SPECIAL JUST £1.95

MR ROBOT & HIS ROBOT FACTORY

One of the most famous of platform games that has you jumping over fire, running over breadmills and bombs, climbing ladders, sliding down poles and more with some great graphics. Master all 22 screens if you can and then create your own for neverending fun. This is what platform games are all about.

DISK ONLY *Recommended price £9.95 on disk*

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ZAXXON

One of the all time classics for the Atari, Zaxxon set new standards when first issued and was copied many times. Pilot your craft across the unique 3 dimensional battlefield shooting enemy fuel tanks, anti-aircraft tanks and missiles before launching off through space for the ultimate conflict with a mighty robot - few have got this far! Zaxxon, often copied, never bettered and NEVER at this incredibly low price!

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